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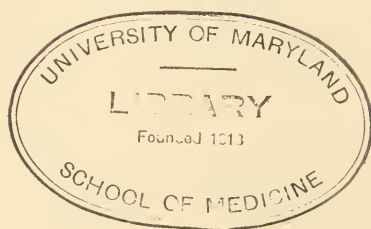
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EDITORIAL

ANTIBIOTICS—THAT OUNCE OF PREVENTION

First and foremost among the improvements in pediatric care has been the continuous progress brought about by the antibiotics. The complications of upper respiratory infections, which were responsible for the great majority of serious childhood illnesses, rarely occur if these infections are treated adequately with antibiotics.

Probably no disease illustrates better the changed aspects in treatment with antibiotics than pneumonia. Before their introduction, infants under two years of age with pneumococcal pneumonia suffered a mortality rate of 30 per cent and represented the greatest single cause of death after the neonatal period. The use of antibiotics has reduced the mortality rate to less than 2 per cent.

Physicians dealing with adults rightly contend that since upper respiratory infections in adults rarely produce serious disease, there is little indication for the application of antibiotics in their treatment. In the pediatric patient a very different condition is presented. Upper respiratory infections in the infant and preschool child frequently initiate a chain of pathologic events that may range from adenitis to meningitis. The inadequacy of defensive mechanisms against common pathogens in patients under 3 years of age must be remembered. While we disagree vigorously with the hypothesis that antibiotics be used for every sniffle, we do recommend that they be used for:

1. upper respiratory infections in infants under 6 months of age
2. to every child with an uncomplicated throat infection who continues with an elevated temperature after 24 hours.
3. whenever any symptoms referable to the middle ear are present. These recommendations are made in full awareness that, if followed, antibiotics will be used for many conditions that do not respond to these drugs. However, the lack of bacteriologic diagnostic aids for the practicing physician make it necessary that he have a "rule of thumb" for antibiotic usage in pediatric patients.

It is to be recognized that the practitioner must select carefully and wisely the antibiotic for each patient and at no time permit fundamental clinical knowledge, application and responsibility to be replaced by an antibiotic prescription.

J. Edmund Bradley, M.D.

FORMATION OF AN ARTIFICIAL URINARY BLADDER IN THE HUMAN:

REPORT OF TWO CASES*

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The adequate treatment of bladder neoplasm has always and still does provoke the most spirited discussion of any urologic problem. The treatment of bladder neoplasm has evidenced the introduction of very many new therapeutic approaches and in all, the results have been far from what is desired. In fact, the end results have not varied greatly with all methods of therapy if one would group the cases of bladder neoplasm according to Jewett's (1) classification. The one great obstacle to better prognosis, smoother convalescence and a normal expectancy of life rests on the proper disposal of the ureters and the elimination of upper urinary tract infection with its inevitable renal destruction and renal insufficiency.

It is this very latter point that retards our approach to the adequate treatment of bladder neoplasm with any hope for lasting success. How many of us can perform a total cystectomy and expect a 5 or 10 year cure for most of our patients? Trepidation rules our decision. We do not hesitate to perform a nephrectomy or prostatectomy. Our results can be predicted. But any individual who is to undergo total cystectomy cannot honestly get a good prognostication from his urologist. The urologist hopes for no immediate post-operative mortality and that the upper urinary tract infection will not follow too quickly. Immediate mortality is around 12.5 per cent (9), but the ultimate mortality as evidenced by the paucity of reported cases with 5, 10 or more years survival is obviously not sufficiently desirable for publication. One is already resigned to the fact that ultimate upper urinary tract infection cannot be prevented—and if upper urinary tract infection is inevitable, renal insufficiency is also inevitable.

We must find a way to prevent upper urinary tract infection. A step in this direction is the removal of the ureters from contamination by the fecal pool of the sigmoid. It has been repeatedly shown and we have observed it independently in our laboratory that when the end of the ureters dip into a contaminated medium, infection ascends to the kidney with resulting pyelonephritis and pyohydronephrosis.

The transplanting of ureters into the skin was one of our first attempts to overcome overwhelming contamination (4, 5). True, this eliminates heavy fecal contamination but cutaneous contamination is also ever present. A great difficulty is prevention of immediate obstruction or the future development of obstruction at the ureterocutaneous area, especially where the ureter turns through the skin. This has been a difficult problem and has repeatedly led to hydroureter and hydronephrosis with consequent infection and destruction of the kidney with death from urosepsis.

Aside from such definite difficulties, even in palliative cases, the difficulties of personal hygiene, nursing care, social limitations and self ostracism has added tre-

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mendously to the patient's difficulty. This has been so marked that the procedure of ureterocutaneous transplantation has been almost disregarded in favor of uretero-sigmoid anastomosis with its expectant pyelonephritis and hydronephrosis.

The experimental development of an artificial urinary bladder was undertaken by us specifically to eliminate the possibility of a continuous exposure of the ureters to infection and contamination and also to reestablish physiologic continuity of the urinary tract and, incidentally, the elimination here too, of psychic trauma to the patient (11, 12).

Tizzoni and Foggi (14) first experimented in this direction when they formed an artificial urinary bladder in dogs from an isolated loop of small intestine. Many procedures have been since tried utilizing almost every known area of utilizable anatomy.

In 1912, Lemoine (8) tried to form an artificial urinary bladder out of an isolated segment of rectum. Unfortunately on the 15th postoperative day, the distal sigmoid colon separated from the proximal ano rectal segment with consequent sepsis and death on the 18th day.

In 1947, Rubin and Goldstein (11 and 12) began some experimental work with the formation of an artificial urinary bladder made from an isolated segment of sigmoid colon in dogs and obtained considerable success in this procedure.

Experiments of this nature were also done by Bisgard (2) and by Thompson (13), with notable success.

Finally in 1949 2 attempts were made to give our experimental work clinical application and consequently 2 case reports are herein presented to give our initial experiences with the formation of an artificial urinary bladder in the human using a section of the sigmoid for the bladder.

In view of the fact that we are reporting only on the formation of an artificial urinary bladder in the human we are eliminating much of the data about the patients with the exception of informing the reader that carcinoma of the bladder was present in each of 2 *debilitated poor risk patients*, the first patient having an additional condition of chronic tuberculosis.

CASE REPORTS

Case No. 1. (D. S. 10391). A 67 year old white male was admitted to the Sinai Hospital with a 9 month history of intermittent episodes of spontaneous and painless hematuria. The urine was mostly bloody at the onset of micturition and was associated with frequency, urgency and some dysuria.

The physical examination on admission, October 4, 1949, presented the following important facts.

The rectal examination revealed no internal or external hemorrhoids. The anal sphincter was of good tone and the prostate gland was slightly elevated, soft, doughy and elastic in consistency, with a small firm but not hard nodule 0.5 cm. in diameter present in the right lateral lobe.

On admission, an 18 (French) 5 cc. Foley catheter was inserted into the bladder and 750 cc. of bloody urine containing clots was obtained. A transfusion of 500 cc. of whole blood was given. Cystoscopy was performed under sodium pentothal anaes-

thesia. After washing out many clots, a large irregular, ulcerated neoplasm about 2 cm. in size was seen occupying the right posterolateral wall of the bladder. This had a broad base. A second growth was present on the right anterolateral wall about 1 cm. in diameter and this neoplasm seemed to arise from the bladder in its entire extent. A third lesion with a broad base was also present behind the trigone and this also was covered with an adherent blood clot.

A specimen of urine sediment studied by the Papanicolaou technique revealed mainly polymorphonuclears, erythrocytes, and clumps of bacteria. No tumor cells were found.

Laboratory Data: The urine was always grossly bloody and on culture revealed *B. proteus* and on the day prior to the first operative procedure, *Aerobacter aerogenes* was also found. A urinalysis on October 13, 1949 revealed a specific gravity of 1.008, reaction acid with one plus albumin and no sugar. Microscopically, many erythrocytes, leucocytes, and short rods were present. The blood urea ranged around 35 mgm. per cent, blood sugar 82 mgm. per cent with acid phosphates of 0.075 units and alkaline phosphatase of 0.76 units. The blood Wassermann was negative. The hemoglobin was 9.7 gm. or 67 per cent with erythrocytes numbering 3.53 million. Blood leucocytes numbered 16,800 per cubic millimeter. Prior to the first operative procedure, the blood hemoglobin was 14.1 gm. or 97 per cent and blood urea was 40 mgm. per cent.

Roentgenography: Chest: This was interpreted as showing fibroid infiltration of both apices, the result of an old tuberculous infection and showing no evidence of activity at the time.

A flat film of the abdomen revealed both psoas shadows well outlined. Both kidneys were normal in size, shape and position. Several small calcific shadows were present but none were suggestive of calculi in the urinary tract. Intravenous pyelograms revealed the dye appearing in normal time and concentration on both sides with normal configuration of the pelves, calyces and ureters.

Films of lumbar spine, pelvis, skull and chest revealed no evidence of metastatic neoplastic growth.

Electrocardiography: This was interpreted as a normal tracing.

Proctoscopy. The proctoscope entered easily to 12 inches and no lesion was present. Diagnosis was malignant papillomatosis of the bladder. On supportive therapy the patient was prepared for a multistaged procedure to produce an artificial sigmoid urinary bladder to replace the carcinomatous organ.

On October 18, 1949, under continuous spinal anaesthesia supplemented with sodium pentothal, bilateral ureterosigmoid implantations were performed and the ureters inserted about 5 cm. apart. The sigmoid was then transected above the implantation. The proximal end of the colon was brought out as a descending colostomy. With the uretero-intestinal implants as the mid-point, approximately 9 cm. of sigmoid was marked off with silk ties and the proximal end of the distal sigmoid was closed off leaving a blind pouch leading to the rectum below. One ureteral splinting catheter was left in the rectum and the other was brought out through a rectal tube. Portions of each ureter were sent for histologic study. The right ureter was reported as showing evidence of chronic ureteritis. The left ureter and also a piece of the wall of the sigmoid were normal. Cultures taken from the right kidney revealed *B. Coli*.

The urine from the left kidney was sterile. Culture from within the sigmoid segment at the anastomotic site revealed no pathogens.

Postoperatively, the patient developed some distention of the colon which was caused by an obstruction at the colostomy. A Miller-Abbott tube relieved much of this distention as did dilatation of the colostomy. The urinary drainage per rectum was excellent but the intermittent episodes of abdominal distention caused some elevation of temperature at the end of 1 week and again at the end of 2 weeks. Penicillin on the first occasion and then with Aureomycin and streptomycin, together with colostomy irrigations permitted a more satisfactory course and an afebrile period. This permitted a good preparation of the patient for the second stage of the procedure.

Four weeks later on November 15, 1949, under continuous spinal anaesthesia supplemented by sodium pentothal, cyclopropane and oxygen, the second stage of the procedure was performed to complete the formation of the artificial urinary bladder. At this time, the blood urea was 34 mgm. per cent, the blood chlorides (as NaCl) 525 mgm. per cent or (90 milliequivalents) and the carbon dioxide combining power 47.5 volumes per cent. The hemoglobin was 12.9 gms. or 89 per cent with blood leucocytes numbering 14,300 per cubic millimeter. A differential count showed 93.7 polymorphs. A culture of urine through a rectal tube revealed *B. proteus*.

At the second stage of the procedure a great many adhesions were found binding down the lower sigmoid and rectum, particularly in the left pelvis. In this latter area, a small abscess was found which contained some feces. Nevertheless, a total cystectomy including the prostate gland and seminal vesicles was performed without much difficulty. Difficulties arose with the mobilization of the sigmoid particularly in the region of the pelvic abscess. The patient's general condition was very poor and on several occasions, the blood pressure was not obtainable, however, with repeated transfusions, the operative procedure was completed. The sigmoid was resected from the rectum and the upper end of the rectum was closed with great difficulty. One could not be certain whether both ureters were included in the isolated sigmoid segment. The distal end of the isolated sigmoid was then sutured to the proximal end of the urethra by means of about 6 interrupted chromic catgut sutures taken around the circumference of the anastomosis. A 30 cc. Foley catheter was inserted into the artificial urinary bladder and distended with 20 cc. of fluid. The peritoneum was then sutured like an apron to the lateral and anterior abdominal walls and drains were placed into each lateral fossa on each side of the sigmoid-urethral anastomosis.

Pathologic Report:

Microscopic diagnosis: Papillary transitional cell carcinoma of the bladder with multiple implants but no invasion beyond the lamina propria of the mucosa. No lesion was present in the seminal vesicle or prostatic tissue.

Postoperatively, the patient's general condition was satisfactory but he drained urine profusely suprapubically and also per rectum. The least amount of drainage occurred through the urethral catheter. A sump drain was utilized suprapubically and this succeeded in keeping the patient more comfortable. Apparently, the sigmoid-urethral anastomosis did not hold and a suprapubic fistula developed directing much of the urine suprapubically with some through the urethra. Because of the continua-

tion of rectal urinary drainage, we felt that either a ureter was present in this distal segment or a fistula had developed in the previous abscessed area, connecting the artificial bladder with the rectum.

In order to establish this latter point, a cystogram was attempted on December 13, 1949 without much success, however, the iodide solution injected per urethram drained suprapubically but none drained through the rectal tube. A repeated attempt was also unsatisfactory but a separation between the artificial bladder and urethra was evident with extravascular accumulation of dye in this area. A cystoscopic examination was also unsatisfactory as the bladder could not be distended. All the irrigating fluid immediately drained off suprapubically. None, however, drained per rectum confirming the view that no connection or fistula existed between the newly



FIG. 1, *Case I*. Cystogram of artificial sigmoid bladder; oblique view; revealing configuration and extent of the artificial bladder

formed bladder and rectum. Apparently rectal drainage of urine was the result of the failure to include one of the ureters in the newly formed bladder.

Shortly, the suprapubic wound ceased draining and all the bladder drainage was evident through the urethral catheters. This urinary drainage, however, kept pace with equally heavy rectal drainage of urine, with occasionally fluctuation of excessive drainage of one site over the other. A cystogram at this time revealed the artificial bladder to be fairly well outlined by the dye and to be smooth and regular in appearance. There was no reflux up the ureters. (Figure 1.)

Proctoscopy was performed with passage of the instrument for 16 cm. Beyond this point, marked discomfort was evident. The rectal mucosa looked normal with normal folds. Urine was noticed to trickle from an opening proximal to the tip of the proctoscope, however, the rectal folds kept obscuring this area and further examination was not satisfactory.

The patient continued to drain urethrally and rectally. His prolonged hospitalization soon became complicated by anorexia, loss of weight and a slowly increasing blood urea. On admission, it was 36 mgm. per cent (10-4-49). At the first operation, it was 38 mgm. per cent (10-19-49). At the second operation, it was 34 mgm. per cent (11-16-49). However, the blood urea ranged between 50-70 mgm. per cent for several months postoperatively until 2-2-50, when it rose to 174 and remained at this level until the time of his demise and just prior to death, it rose to 204 mgm. per cent. Death resulted from bronchopneumonia with uremia as a contributing factor.

Post-Mortem Examination (# 2583):

Abdomen and Surgical Site—The abdomen is flattened. There is a well healed 12 cm. long, suprapubic surgical incision. There is a 14 cm. mid-left rectus incision well healed, with a well healed 2 cm. transverse extension from the lower part of this incision laterally. Situated 2 cm. above the left anterior superior iliac spine there is a protruding portion of sigmoid colon which forms the site of a colostomy. Its orifice is widely patent. There is no free fluid in the peritoneal cavity. The peritoneal surfaces are smooth and glistening. Upon opening the space of Retzius, an abscess cavity is entered which contains approximately 50 cc. of yellowish creamy material. This abscess cavity extends from the midline to the right and posteriorly to surround the posterior surface of the rectum. A catheter inserted through the penis extends into a sausage-shaped pouch which occupies the site of the bladder but extends posteriorly and to the left to be resting on the pelvic brim. This pouch consists of a loop of sigmoid colon which ends blindly. In the posterior mid-portion it receives the left ureter. The orifice of the left ureter is sharply angulated. The proximal portion of the ureter is strikingly dilated and measures 2.6 cm. in diameter in the open state. The pouch of sigmoid colon contains a defect on the right lateral wall which communicates with the above described abscess cavity. The right ureter ends blindly within the same abscess cavity. The sigmoid colon facing the blind end of the ureter contains a defect which measures 0.3 cm. in diameter. The distal portion of the sigmoid colon ends blindly. The end of the proximal portion forms the colostomy. The lower border of the liver is 2 cm. below the costal margin in the right midclavicular line. The spleen is completely hidden behind the left costal margin. The right dome of the diaphragm is at the level of the fourth rib. The left dome of the diaphragm is at the level of the fourth interspace. The femoral veins milk freely.

G. U. Tract: The right kidney measures 13.5 x 8.0 x 3.0 cm. and weighs 200 grams. The left kidney measures 11.0 x 7.0 x 2.1 cm. and weighs 130 grams. The capsules strip with ease, revealing light reddish brown, essentially smooth but lobulated surfaces. The surfaces are studded with innumerable raised nodular pinpoint to 0.4 cm. sized soft and confluent yellowish brown foci. On section, the cut surfaces of the kidneys reveal that these yellowish brown foci extend into the underlying cortex up to its full depth and into the medulla. These foci in part tend to be confluent and are seen as broad bands within the cortex and medulla of the kidney. The cortical striations as well as the glomeruli, are indistinct. The corticomedullary line of demarcation is indistinct. The pyramids are blunted particularly in the right kidney. The calyces, pelves and ureters are dilated particularly on the right side. The bladder is absent.

The left ureter opens into the blind loop of sigmoid colon. The latter is anastomosed to the prostatic urethra. This opening is widely patent. The right ureter ends blindly just outside of the rectum and the abscess cavity. The testes are similar and equal in size and shape. On section, the cut surfaces of the testes are tawney colored and the tubules string with ease. The epididymi are not remarkable.

Anatomic Diagnosis:

Status: Post-bilateral uretero-sigmoid anastomosis and colostomy—4 months (S. S. #19847), post-formation of artificial bladder (S. S. #19941), obliteration of right ureter, defect of sigmoid colon at site of ureterosigmoid anastomosis, defect of “artificial bladder” with abscess formation in space of Retzius, pyonephrosis and pyoureter, bilateral, bronchopneumonia, right and left lower lobes; fibrinous pleuritis bilateral, coronary arteriosclerosis, mild, without narrowing; myocardial fibrosis, papillary muscles, left ventricle; dilatation of right and left ventricles of heart; hypertrophy of left ventricle of heart; chronic interstitial mitral valvulitis, rheumatic; terminal thromboendocarditis of mitral valve; pulmonary and aortic arteriosclerosis; pulmonary edema and congestion; acute congestion of liver and spleen; chronic fibrous tuberculosis of lungs; cylindrical bronchiectasis; pulmonary emphysema; chronic obliterative pleuritis, right; fibrous pleural adhesions, left; chronic perihepatitis; calcified tracheobronchial lymph node; esophageal varices; hypertrophic arthritis of thoracolumbar spine; anemia, secondary.

Clinical State: Hematuria, suprapubic urinary drainage and urinary drainage per rectum following “artificial bladder” operation, hypertension (B.P. 170/90), azotemia (Bl. urea 220 mg. per cent).

Cause of Death: Renal insufficiency, bronchopneumonia.

Case No. 2 (F. R. 9563) A 59 year old white female was first examined in 1947. At that time, she related the passing of blood and gravel in urine in 1941. She remained asymptomatic until 15 months prior to this visit when she again passed some more blood. In the past 15 months, she intermittently passed what she called “gravel.” For the past 2 weeks prior to the office visit, she passed blood and clots in her urine every day. This was associated with a pressing sensation in the bladder, frequency and nocturia. There was no associated lumbar or abdominal pain. An examination at that time failed to reveal abdominal masses or areas of tenderness. An examination of the external genitalia revealed a red meatus but no tenderness. A cystoscope was then passed and inspection of the bladder revealed a large villus mass, protruding into the bladder. It was so large, however, that it was difficult to tell the size and extent of the base. She was then hospitalized. Intravenous pyelograms revealed both kidneys to be normal. A partial resection of the bladder was performed under spinal and sodium pentothal anaesthesia. On exposing the bladder, several large and small tumors were found, the smallest measuring 1.5 cm. in diameter and the largest measuring 5 cm. in diameter. Six large tumors were removed with a large portion of the bladder. After this, no further tumor tissue was visible. The pathologic diagnosis was repeated as multiple papillary transitional cell carcinoma of the bladder with invasion of vessels of the lamina propria.

Following this procedure, she had a bladder capacity of about 90 cc. The patient

was then discharged from the hospital. Further therapy to increase her bladder capacity was successful and she was able to retain up to 140 cc. of urine. Between her discharge on November 9, 1947 and November 22, 1948, the patient was cystoscoped on numerous occasions. On November 22, however, cystoscopy revealed a papillomatous growth, small in size with a small pedicle situated behind the left ureteral orifice. Thereafter, numerous new lesions appeared and in spite of repeated fulgurations, the incidence of the recurrent lesion was greater than the success at fulguration. Intravenous pyelography on April 15, 1948, revealed some dilatation of the pelvis and ureter on the right. By October 28, 1949, intravenous pyelograms revealed very little dye coming through the right kidney. The left renal pelvis and calyces were normal. At this time, she was hospitalized because of the spreading bladder lesion, strangury and hematuria. On this admission to the hospital, laboratory data revealed a blood urea of 74 mgm. percent, blood chlorides of 549 percent, total blood proteins 7.3 gm. percent, with albumin 4.5 and globulin 2.7. Blood sugar was 97 mgm. percent. The blood count revealed 3.85 million erythrocytes per cubic millimeter with 9.9 gms. of hemoglobin; leucocytes numbering 7900 per cubic millimeter with 77 percent neutrophils and 23 percent lymphocytes. The urine was yellow in color, specific gravity was 1.020, acid in reaction. There was also a trace of albumin but no sugar. Microscopically, the urine contained numerous erythrocytes and leucocytes. Urine culture on admission revealed *E. coli*. The phenolsulfonephthalein test revealed a total concentration of 5 percent in 15 minutes, 10 percent in 30 minutes, 15 percent in 1 hour and 15 percent at the end of 2 hours for a total of 45 percent at the end of 2 hours. Blood Wassermann was negative.

A cystoscopy was then performed under sodium pentothal anaesthesia and this revealed several areas of very active tumor growth. This was associated with marked edema of the bladder wall. Neither ureteral orifice could be visualized. Five cc. of 59 per cent methylene blue was given and this appeared from the left kidney in 8 minutes but there was no appearance of the dye from the right kidney.

On November 1, 1949, under continuous spinal and sodium pentothal anaesthesia, the first stage of the operation for the formation of an artificial urinary bladder was performed. At the operation, the right ureter was seen to be markedly dilated. The left ureter appeared normal. Because of this, only the left ureter was freed and ligated close to the bladder, and then the ureter was severed above the point of ligation. This ureter was then implanted into the sigmoid colon about 12 cm. from the anus, utilizing an indwelling ureteral catheter, the distal end of which was inserted into a rectal tube. Following this, the transverse colon was exposed. Then, the anterior portion of the omentum was incised and a loop of the colon brought through this opening. A second incision was then made above the original incision to receive this double loop colostomy.

Operative technique:

Findings: Upon opening the abdomen, a normal redundant descending and sigmoid colon were present. There were some omental adhesions anteriorly to the previous appendectomy scar. An examination of the pelvis revealed a rather small atrophic uterus which contained multiple fibromyomata, none larger than about 2

cm. in diameter. The right ureter was moderately dilated with a diameter of 1.5 cm. The left ureter was normal in size and consistency.

Procedure: The patient was prepared and draped in the usual manner and a rectal tube was inserted into the rectum and lower sigmoid. An incision was then made to the left of the midline through the skin, rectus sheath and rectus muscle for the entire length of the incision exposing the anterior peritoneum. The incision extended from 3 cm. above to about 10 cm. below the umbilicus. Hemostasis was secured and the peritoneum was opened to the extent of the wound. Pelvis structures were mobilized and packed cephalad with several abdominal packs exposing the pelvis which contained a moderately dilated bladder (caused by urine.) The bladder did not show much induration, however, it was somewhat thicker at the right base than elsewhere. No extension of the neoplasm beyond the bladder was observed. The peritoneum over the area where the right ureter crossed the bifurcation of the common iliac was incised exposing the ureter which was examined.

Findings are noted.

This ureter was not incised. Following this, the left ureter was located, peritoneum incised over it at the point where the left ureter crosses the bifurcation of the common iliac on the left. The ureter was then freed distally to where it enters the bladder and also proximally for several centimeters. Hemostasis was simultaneously secured. Two ties were then placed around the lower end of the left ureter which was then severed from its continuity with the bladder. A #8 ureteral catheter was inserted into this ureter toward the kidney in retrograde fashion and culture of urine from this kidney was obtained. A small portion of posterior surface of the terminal end of the left ureter was also removed for biopsy thus causing the free cut end of the left ureter to have an oblique shape. The sigmoid was mobilized and two silk sutures were taken to show approximately the extent of the proposed sigmoid bladder. This measured 12 cm. between sutures. By means of sutures medially and laterally, the ureter was fixed to a desirable position in the sigmoid. The sutures were taken about 2.5 cm. from the distal end of the severed left ureter. The sigmoid musculature was then divided with the serosa for a distance of about 2 cm. permitting the mucosa to bulge into the wound. The terminal portion of the incision was deepened through the mucosa and the rectal tube was made to present through this opening. The ureteral catheter was then threaded retrograde through the rectal tube. A mattress suture was then placed in the upper lip of the distal end of the ureter and each end of the mattress suture was inserted from within out through the sigmoid lumen and the ureter tied in situ. Three sutures were then utilized to approximate the serosa and muscularis very loosely over the ureter which was now laying in the submucosal area. The sigmoid was placed into the pelvis. The anterior omentum was then mobilized and an opening made through it securing hemostasis. A suitable portion of transverse colon was also mobilized and its mesentery incised in order to permit a knuckle of transverse colon to be delivered through this opening made in the anterior layer of the omentum. A second incision was made in the midline between the xiphoid process and umbilicus about 4 cm. in length. The incision was deepened through the subcutaneous tissue, rectus sheath, muscle and peritoneum. A third

incision parallel to the second incision, but 2 cm. to the left, was also made down to the anterior rectus sheath and made to communicate with the second incision at this level. The knuckle of transverse colon previously isolated was now delivered through the second incision and DeMartel-Wolfson intestinal clamps were applied. The anterior peritoneal layer was closed with several continuous C cotton thread sutures. Several interrupted B cotton sutures were used to approximate rectus muscle and the same material was employed as a continuous suture to approximate the anterior rectus sheath. The skin was closed with continuous silk. Immediately before final closure, 500,000 units of penicillin were placed intra-abdominally. Following this, the transverse colon was divided between the clamps with a carbolyzed knife. The proximal loop of transverse colon was delivered through the second incision with the DeMartel-Wolfson clamp in place. The distal barrel of the sectioned transverse colon was delivered through the third incision also with its DeMartel-Wolfson clamp. No sutures were utilized to fix the double-barrel colostomy in place. Vaseline dressing was applied. Dry dressing was applied to the first abdominal wound. There was no shock. The patient received 500 cc. of whole blood in the operating room. Her condition was satisfactory.

Following the operation, urine drained satisfactorily through the rectum and fecal material passed through the colostomy.

The second stage of the procedure to form an artificial bladder was then performed on November 25, 1949, under continuous spinal anaesthesia. At this operation, a total cystectomy was performed and the segment of sigmoid which contained the left ureter was isolated. This segment of sigmoid which was intended for the artificial sigmoid urinary bladder was 12 cm. in length. The proximal end was closed and then the right ureter which had not as yet been implanted was then implanted into this segment by utilizing a #10 ureteral catheter, the distal end of which made its exit through the urethra through an indwelling Malecot catheter. The proximal portion of the colon was then anastomosed to the proximal end of the recto-sigmoid, thereby establishing continuity of the bowel by an end to end anastomosis. The distal end of the isolated sigmoid was then anastomosed to the proximal end of the urethra by means of two layers of continuous sutures. The Malecot catheter mentioned above was left in the artificial sigmoid bladder to make its exit through the urethra. This carried the ureteral catheter from the right kidney mentioned above. The patient's condition at the end of the operative procedure was satisfactory. During this procedure which lasted almost 6 hours, the patient was supported with 1500 cc. of whole blood.

Because of the three previous abdominal operations, the peritoneum was densely adherent to the bladder, uterus, descending colon and all other pelvic viscera, therefore separation was accomplished with extreme difficulty. There did not appear to be an extension of tumor from the bladder. The black silk sutures which had been placed in the sigmoid serosa and muscularis during the first operation were easily identified as was the point where the left ureter entered the bowel. The right ureter was mildly dilated but was easily identified.

With the patient in the dorsal recumbent position, the bladder was inflated with 150 cc. of aqueous zephiran and the skin of the abdomen prepared and draped in

the usual manner. A 10 cm. incision was made just to the left of the healed midline scar and was deepened down to the external oblique aponeurosis. The external oblique aponeurosis was divided perpendicular to the direction of its fibers and anterior rectus sheath divided in the same line at the same time. Both layers of fascia were then split the length of the incision. The left belly of the rectus was then divided bluntly and retracted to both sides. By combined sharp and blunt dissection, an attempt was made to develop a cleavage plane between the bladder and the peritoneum. This was only partially successful. In the process of freeing the bladder, the peritoneum was entered twice but was not closed, closure being left for a later time. Also, as the bladder was being freed, an inadvertent incision was made directly into the lumen whereupon the distending fluid escaped into the wound and was removed by suction. Unfortunately, the incision into the bladder occurred directly over the tumor and from that time until the bladder was finally removed, the tumor protruded from the incision into the operative field. The right ureter, which was identified during the course of dissection, was clamped close to the bladder and divided. Further tedious sharp and blunt dissection was necessary before the entire bladder was mobilized and during the course of this dissection, numerous large vessels, both arteries and veins, were cut and had to be clamped and ligated. This was particularly marked on the left side where it was felt that the ovarian and uterine vessels had been divided. The vesical neck was finally identified and the bladder then amputated at this point, leaving a rim of urethra which was grasped with Allis clamps in order to more easily identify it at a subsequent time. Attention was now directed to the loop of sigmoid between the two black silk sutures. This was first mobilized leaving the mesentery attached and three DeMartel-Wolfson intestinal clamps were placed just above the upper black silk suture following which the black silk was removed. The middle clamp was then removed, the colon divided between the 2 remaining clamps and the ends fulgurated in order to maintain asepsis. The distal clamp was then removed, the lumen opened and then closed with a continuous 0 chromic catgut on atraumatic needle using a Connell type suture. A second layer of reinforcing serosal sutures of black silk was then put in place. The lower end of the loop was similarly clamped and divided. The entire isolated segment was then swung medially together with its mesentery. The diameter of the colon was found to have shrunk during its period of defunctionalization and now closely approximated the diameter of the urethral stump. The distal end of the bowel segment which was to be the new bladder was easily approximated to the urethral stump and there was no tension whatsoever when this was done. A serosal layer of sutures approximating the serosa of the urethra to the serosa of the artificial bladder was now placed using 0 chromic catgut on atraumatic needles beginning at three o'clock and running counter-clockwise to eleven o'clock. This suture was then held. A second layer of sutures was placed also beginning at three o'clock by approximating mucosa of urethra to mucosa of bladder also running counter-clockwise to about eleven o'clock. A #20 Malecot catheter was then inserted into the sigmoid bladder and passed out through the urethra, retrograde. The mucosal layer of sutures was then continued in a counter-clockwise direction until the starting point was reached where it was tied and cut. The serosal layer was then finished in a similar manner. The

right ureter was located, isolated and divided from its distal stump about 2 cm. from where the bladder had been. The proximal end of the distal stump was ligated with #1 chromic. On cross section, the right ureter was somewhat thickened. A verticle incision about 2 cm. long was made on the anterior surface of the artificial bladder, carried out through the serosa and down to the mucosa. The distal end of the ureter was then cut on the bias. A #10 ureteral catheter was inserted retrograde up the right ureter. The distal end of the ureteral catheter was inserted through the defect in the bowel and through the previously inserted Malecot catheter so that the distal end came out through the end of the Malecot catheter. The tip end of the ureter was approximated to the inner surface of the mucosa of the bowel by a mattress suture of 0 catgut, the knot being applied on the serosal aspect of the bowel. The edges of the serosa and muscularis were then approximated to the serosa of the ureter by interrupted 0 catgut. The distal end of the sigmoid was now re-anastomosed to the proximal end of the rectum by the open technique using mucosal approximating sutures of 00 atraumatic catgut and serosal approximating sutures of interrupted A silk. A cigarette drain was placed in the peritoneal cavity at the distal angle of the wound down to the base of the artificial bladder. The peritoneum was approximated by two continuous #1 chromic catgut sutures. The remnants of the pyramidalis muscle were then approximated to the os pubis by #20 gauge stainless steel wire. Recti muscles were approximated with interrupted #20 stainless steel wire, the rectus sheath by interrupted #20 stainless steel wire, subcutaneous tissue by interrupted 0 catgut and skin by interrupted vertical mattress sutures of black silk. The patient received 1500 cc. of blood in the operating room. Her condition was good.

Pathologic Diagnosis:

The pathologic diagnosis was: papillary transitional cell carcinoma of the bladder showing no invasion of the muscularis; acute and chronic ulcerative cystitis; fragment of chronically inflamed ureteral wall.

Immediately following the operation, the patient experienced a great deal of abdominal discomfort. She was lethargic, somewhat disoriented and numerous twitches were observed. The blood urea at this time reached 312 mgm. per cent. Wangenstein suction was set up and fluids were forced. The patient improved somewhat and on December 1, 1949, the blood urea was down to 216 mgm. percent. Gradual improvement continued. At this time, the patient developed a bilateral thrombophlebitis, necessitating bilateral femoral vein ligation. She drained urine both suprapubically and through the catheter. The suprapubic drainage was of a mucopurulent type mixed with urine. A sump pump was attached to the urethral catheter in an attempt to keep the suprapubic wound dry. This was only partially successful in that the urinary drainage diminished but the muco-purulent drainage continued and was now evidently coming from the upper part of the wound. By the fourth postoperative week, the urea reached 96 mgm. percent. There was no urinary drainage suprapubically, all the urine draining through the urethral catheter. However, some purulent discharge was still evident in the suprapubic area. On December 27, 1949, a stereo-cystogram was taken. This film revealed that a separation had oc-

curred between the artificial sigmoid bladder and the urethra. On this account, an indwelling urethral catheter was reinserted. For the next 2 months, the patient drained urine intermittently from the suprapubic area and on occasions, a mucopurulent discharge was also seen coming from a separate site at the upper end of the suprapubic wound. At 6 weeks postoperative, a cystogram was again taken. This revealed an irregularly filled sigmoid which represented the artificial sigmoid bladder. The dye could also be seen entering the right ureter in retrograde fashion. A more satisfactory cystogram was taken on March 3, 1950 (Figure 2). At this time,



FIG. 2, *Case II*. Cystogram of artificial sigmoid bladder, anterior view; revealing configuration, extent and location of the artificial bladder. Here one also may see the outline of the right renal pelvis; calyces, also the right ureter . . . the result of reflux. Some dye can also be seen in the left renal pelvis and parts of left ureter, also the result of reflux.

a satisfactory cystoscopy could not be performed. There was only a small amount of drainage from the suprapubic wound. The urethral catheter was introduced into the artificial sigmoid bladder. This catheter was irrigated several times and had a capacity of 150–200 cc. It was observed that there was some trickling of the irrigation fluid suprapubically. The bladder was filled, the catheter was removed and the patient was able to void 25 cc. of urine; however, 75 cc. was retained and was removed by catheter. A cystogram was then taken introducing 100 cc. of skiodan into the new bladder. This cystogram showed a very satisfactory outline of the sigmoid

bladder, the size and shape of the lower sigmoid being very evident. This bladder extended for a distance of 12 cm. upwards and to the left and had a diameter of about 2.5 cm. throughout. In the upper portion of the sigmoid bladder, there seemed to be somewhat of a constriction which probably led to the suprapubic fistula. In filling the sigmoid bladder, a very faint outline of the right kidney and ureter was obtained. This revealed that the right ureter entered the sigmoid bladder without obstruction and the pelvis and calyces of the right kidney were also demonstrated which revealed only a slight hydronephrosis. This pyelogram, was of course, the result of reflux. The left kidney, pelvis and calyces were not demonstrated but there was some suggestion of the dye leading into the left ureter. This may possibly indicate a left hydroureter. Because the suprapubic fistula drained purulent material, an attempt was made to drain this abscess and repair the artificial bladder. At operation, an extra-peritoneal abscess was found and an opening from this abscess led to the artificial bladder. The abscess was drained, and a suprapubic catheter was inserted into the artificial bladder. As a result of this procedure, satisfactory progress was not as desired. Most of the drainage now came from the suprapubic wound and very little urine drained through the urethral catheter. The wound did not heal satisfactorily. Considerable slough and granulation tissue collected around the edges of the wound and there was a great deal of suprapubic urinary drainage as well as a continuing purulent discharge. The catheter drainage improved after a while and a second attempt was then made to repair the artificial urinary bladder. This repair was performed under spinal anaesthesia. A midline incision was made opening the peritoneum. The anastomosis of the right ureter to the sigmoid bladder was readily located and found to be in good condition. On the left, the artificial bladder was separated with difficulty and a small opening was seen from which the urine had been draining. A figure eight catgut suture was then made in an attempt to close this opening in the artificial bladder. This was then reinforced by three interrupted sutures. A urethral catheter was then placed in the bladder and irrigation of this catheter revealed no suprapubic leakage. A small drain was placed down to the bladder and a catheter left in situ. Postoperatively, the patient still had a slight urinary drainage suprapubically, but most of the urine came through the catheter. On May 28, 1950 the patient suddenly had an epileptiform attack with foaming at the mouth. An examination revealed that she was unconscious with spasticity of the upper extremities, jerky reflexes and absent Babinsky and clonus. This was soon followed by another epileptiform fit and then the patient became completely flaccid. A consultation was obtained and the diagnosis of a cerebral accident was made. Blood urea at this time was 186 mgm. per cent and CO_2 combining power was 20.8 volumes percent. The patient became progressively worse, respirations were stertorous and she only responded to painful stimuli. Her pulse became slow and weak, her temperature was subnormal and she died in a comatose condition on July 10, 1950, eight and one-half months following surgery. The blood urea just prior to death was 264 mgm. percent and the CO_2 was 23.5 volumes per cent.

Post-Mortem Examination # 2637:

Abdomen and Surgical Site: The abdomen is scaphoid. The panniculus adiposus is meager. There is a suprapubic midline scar measuring 14.0 cm. Upon opening it,

there are several small pockets seen which contain a yellowish pink, creamy material. There is a well healed, left midrectus scar measuring 19.0 cm. in length. In the LLQ there is a V shaped surgical scar. Its medial limb measures 10.0 cm. and the lateral limb 8.0 cm. At the apex of this scar, there is a fistulous tract measuring 0.7 x 1.5 cm. draining a yellow, purulent material. A seropurulent discharge is found in the subcutaneous tissues as well as cotton and steel suture material. The fistulous tract itself leads to a suprapubic cavity measuring 4.0 to 5.0 cm. in diameter in which can be seen the tip of the Foley catheter which lies in the urethra. The stoma of a sleeve of sigmoid which acts as an artificial bladder apparently opens into the same cavity. Several black silk sutures are seen about this stoma. The upper end of the sleeve, which measures 11.0 cm. in length is closed and bound down in the abdominal cavity. The right ureter freely communicates with the sleeve's upper end. The left ureter is closed and lies near the sigmoid colon at a point 26.0 cm. above the anus. At this point can be seen a puckering of the sigmoid, apparently by suture material. However, the left ureter is not connected with the large intestine. The abdominal cavity contains a small amount of clear, straw-colored fluid. There are many adhesions between loops of the small and large intestines. The peritoneal surfaces are slightly injected. The urinary bladder is absent. A colostomy is present in the LUQ. Its orifices are widely patent and admit one fingertip with ease. The spleen is completely hidden behind the thoracic cage. The femoral veins milk freely.

G.U. Tract: The kidneys are shrunken and irregular in shape and brownish gray in color. The left kidney weighs 90 grams and measures 9.0 x 4.5 x 3.3 cm. The right kidney weighs 60 grams and measures 7.0 x 4.0 x 2.8 cm. The ureters are dilated, measuring 2.7 cm. in circumference and 17.0 cm. in length on the left and 25.0 cm. x 14.0 cm. on the right. The terminations have been previously described. The capsule of the kidneys strip with slight difficulty. The surfaces are coarsely granular and present a brownish gray and yellow pebbled appearance. Scattered over the elevated surface are soft round, yellow nodules which measure from 0.2 to 0.3 cm. in diameter. On section, they are seen to extend into the cortex for distances of several mm. There is a bluish white cyst measuring 2.0 cm. in diameter on the anterior surface of the upper pole of the left kidney which is filled with a translucent fluid. On section, the pelves and calyces are dilated. The mucous membranes are injected, especially on the left. The calyces are ballooned out and the corresponding pyramids are blunted. An abscess cavity measuring 0.6 cm. in diameter occupies one of the pyramids on the left. The cortico-medullary line of demarcation is intraversed by radial yellow streaks. A section through the zones of depression reveal a complete loss of structure by a grayish white, fibrous tissue. The remainder of the urinary tract has been described. The vagina and cervix are not remarkable.

Anatomic Diagnosis:

Status: Post-cystoscopies and biopsies of bladder tumor (SS # P-12146) P-15465, P-15883 and P-16373); post-transverse colostomy and left ureterosigmoid anastomosis—8 months (SS # P-18465); post-total cystectomy, formation of artificial bladder from sigmoid colon with right ureteral transplant into artificial bladder and end-to-end anastomosis of sigmoid colon—7 months (SS # P-18702); post-repair of "arti-

ficial" bladder—8 months (SS # P-19780); post-revision of "artificial" bladder—19 days (SS # 20533); disruption of anastomosis between urethra and artificial bladder with retropubic abscess formation and fistulous tract formation of anterior abdominal wall, disruption of left ureterosigmoid anastomosis, localized peritonitis, acute and chronic suppurative pyelonephritis, bilateral; chronic pyonephrosis and pyoureter, bilateral; coronary arteriosclerosis, minimal; pulmonary and aortic arteriosclerosis; pulmonary edema and congestion; pulmonary emphysema; acute congestion of liver and spleen; calcified nodule of liver; chronic cholecystitis; cholelithiasis; endometrial polyp; fibromyoma uteri; status: postappendectomy—13 years; anemia, secondary.

Clinical State: Hematuria, azotemia (Bl. urea—264 mg. per cent), comatose, epileptiform seizures.

Cause of Death: Renal insufficiency.

Similar attempts have been made to form an artificial urinary bladder from different areas of the intestine, notably of the caecal segment of the bowel, and success in this adventure was first reported by Verhoogen in 1908. He was followed more recently by Cortes in 1946 in South America and also by Merrick et al in this country in 1950. However, urinary control is not complete in the former or overflow is inevitably present, and the latter necessitates repeated catheterization to prevent overflow incontinence. In addition, experimentally, the utilization of the caecum as a urinary reservoir is contraindicated because of the ready absorbability of nitrogenous urinary products in this area of the colon and consequently leads to azotemia. Recently Boyce (1), and others previously, have shown that the ability of the colon to absorb nitrogenous products decreases as one advances distally in the colon. The sigmoid area exhibits no appreciable reabsorptive powers distally in the colon, and has been repeatedly shown, both experimentally and clinically to be an ideal place for ureteral transplantation.

The need for wider application of such procedures as the formation of an artificial urinary bladder is very necessary in order to enable us to view with the proper perspective whether the technical difficulties of the procedure, or the artificial sigmoid bladder itself, is at fault.

Technical perfection will come only through repeated endeavors and it is our opinion at this time that a one-stage procedure is the procedure of choice and probably technically less difficult than a multi-stage procedure.

Weyrauch, Burns, Peterfy and Hinman (16) have shown the important part an infected bowel plays in upper urinary tract infection. In their experiments on dogs, they observed that "with an almost uncanny regularity, ascending infection followed on the side with the ureterointestinal transplant while in the same dogs, the side reimplanted into the bladder escaped with only the mildest changes" and they concluded that ascending infection is directly attributable to the degree of ureteral contamination.

The formation of an artificial urinary bladder to eliminate the contaminated pool, therefore, looms as an increasingly important step as the best method for eliminating the ureters from contamination. Only by a more general experience with such procedures will our technical knowledge reach the desired level to enable us to evaluate

with the proper perspective, the usefulness of such an extensive procedure for the treatment and cure of bladder neoplasia, et cetera.

CONCLUSIONS

In making this report we wish to make it clear that the procedure was carried out in two of the worst possible surgical risks. Our desire was to see if the procedure was possible in the human.

The autopsy findings demonstrated definitely that while complete anastomosis between the urethra and the sigmoid bladder was not present that most of the union held. There exists no doubt in our minds that if either of our patients had not had many other previously existing pathologic conditions and were not poor surgical risks that our results would have been different. In addition to the above, some technical difficulties were encountered which can also be improved upon, particularly in performing the operation as a one-stage affair rather than a multiprocedure—in an individual who may be a better surgical risk. Certainly the procedure should be selected only for cases of good or fair surgical risks and in individuals whose bladder lesion is not so extensive that no operative procedure would be of any value. Consequently, we would suggest the selection of patients to be confined to moderately early bladder carcinomatous lesions in fairly good condition, and the procedure to be carried out in one stage even though it should consume a number of hours to complete the operation. Up to the present time, none of the many radical procedures carried out for carcinoma of the bladder have offered too much encouragement for a long period of survival without too much morbidity. Our procedure, will completely revolutionize the treatment of carcinoma of the bladder because the ultimate outcome, if successful, will produce a result closer to the normal physiologic process. Urine would be ejected from the kidneys into a new organ which would not be bathed in fecal material allowing for less chance of renal infection and renal insufficiency. Finally it would be discharged under control through the urethra rather than through the rectum or upon the abdomen. The mental hazard would be eliminated, therefore, the patient would not procrastinate in having the procedure performed. This in itself causes dangerous delay.

We are reporting here 2 cases where an artificial urinary bladder was produced in the human, with partial success, using the sigmoid for a bladder. It is hoped that in the near future completely successful cases will be reported.

BIBLIOGRAPHY

1. BOYCE, W. H.: The absorption of certain constituents of urine from the large bowel of the experimental animal (dog). *J. Urol.*, **65**: 241-263, 1951.
2. BISGARD, J. D.: Substitution of the urinary bladder with a segment of sigmoid. An experimental study. *Ann. Surg.*, **117**: 106-109, 1943.
3. CORTES, S. T.: Operación de triana. Nueva tecnica de exclusion de la vejiga utilizando el ciago aislado como receptaculo urinario. *Bol. y trab. Acad. argent. de cir.*, **30**: 558-572, 1946.
4. GOLDSTEIN, A. E.: Ureterocutaneous transplantations. *J. Urol.*, **46**: 872-884, 1941.
5. GOLDSTEIN, A. E. & BERMAN, E. F.: Ureterocutaneous transplantation; A new procedure. *J. Urol.*, **52**: 224-234, 1944.
6. HINMAN, F. & SMITH, D.: Total cystectomy for cancer. A critical review. *Surgery*, **6**: 851-881, 1939.

7. JEWETT, H. J. & STRONG, G. H.: Infiltrating carcinoma of the urinary bladder; Diagnosis and clinical evaluation of curability. *Southern Med. Jour.*, **39**: 203-208, 1946.
8. LEMOINE, G.: Creation d'une vessie nouvelle par un procede personnel apres cystectomie total pour cancer. *J. d'urol.*, **4**: 367-372, 1913.
9. MARSHALL, V. F.: Transplantation of the ureters and total cystectomy. *J. Urol.*, **58**: 244-249, 1947.
10. MERRICKS, J. W., GILCHRIST, R. K., HAMLIN, H. & RIEGER, I. T.: A substitute bladder and urethra, using cecum as bladder and ileum as urethra. *J. Urol.*, **65**: 581-589, 1951. Also *S. G. & O.* **90**: 752-760, 1950.
11. RUBIN, S. W.: The formation of an artificial urinary bladder with perfect continence: An experimental study. *J. Urol.*, **60**: 874-903, 1948.
12. RUBIN, W. S.: Discussion of paper by Merricks, J. W. et al. *J. Urol.*, **65**: 588-589, 1951.
13. THOMPSON, H. T.: Observations on isolated sigmoid loop substitution following total cystectomy in the dog: Preliminary report. *J. Urol.*, **64**: 85-101, 1950.
14. TIZZONI AND FOGGI, A.: Die wiederherstellung der harnblase; experimentelle untersuchungen. *Centralbl. f. chir.*, **15**: 921-924, 1888.
15. VERHOOGEN, J.: Neostomie uretero-cecale. Formation d'une nouvelle poche vesicale et d'un nouvel uretre. *Ass. Franc. d'urol.*, **12**: 352-365, 1908.
16. WEYRAUCH, H. M., BURNS, R. A., PETERFY, R. A. AND HINMAN, F.: An experimental study of ureterointestinal implantation. IV. The significance of ureterovesical reimplantation in the dog. *Surg., Gynec. and Obst.*, **72**: 192-197, 1941.

REGITINE ®, CLINICAL OBSERVATIONS ON A NEW ADRENOLYTIC AND SYMPATHOLYTIC DRUG*

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In recent years investigation of anti-spasmodic as well as sympathetic blocking drugs has gained widened attention. In studying sympatholytic drugs, awareness has been focused on the treatment of abnormal peripheral vascular states. Concomittantly, in many instances attention has been focused on their effects on hypertensive states.

Agents effective on vascular states seem to fall into one of three categories; (1) those whose effect is directly on smooth muscle, (2) those which block at the ganglion, and (3) those which block sympathetic nerve transmission at the effector organ.

This study has been concerned with a drug which falls into the latter category. Some of the more recent sympathetic blocking agents under investigation are Priscoline ®, an imidiazoline derivative (1-4); F 933, a benzodioxane derivative (5); and Dibenamine ® (6).

This report deals with an agent known as Regitine ®.† Like Priscoline, it is an imidiazoline derivative. The drug has been subjected to considerable laboratory investigation and the pharmacologic properties are briefly summarized (7-13).

The most outstanding feature observed was the epinephrine reversal effect of Regitine. This was accomplished with minimal amounts of the drug, whereas the sympatholytic effects were noted only when larger doses were administered. Hence, it was deduced that the drug is a potent adrenolytic and, secondarily, a sympatholytic. This epinephrine reversal action was observed in all phases of adrenergic activity except in epinephrine hyperglycemia, in which circumstance Regitine prolonged the epinephrine induced hyperglycemia. This probably results from the fact that Regitine itself causes a slight but prolonged increase in blood sugar. Another explanation offered is that Regitine "spares" epinephrine since its activity is prevented elsewhere, permitting a relatively higher amount to act in the liver.

This epinephrine reversal act can be abolished with ephedrin, pitressin, and pilocarpine and other parasympathomimetic drugs. In return, the act is restored with atropine.

Regitine persistently lowered blood pressure in all animals except the unanesthetized dog. It caused sensitization of the carotid reflex with a resultant greater pressor effect. Blood flow in the renal and coronary arteries diminished and increased in the mesenteric and femoral arteries. This would indicate an increased blood flow to the skin and the muscles despite the decrease in blood pressure. Tachycardia is not a prominent feature. On the frog heart there was a slight chronotropic response in low dosages and definite functional disturbance with larger amounts.

The drug had no direct effect on smooth muscle, the uterus, respiration, or the bronchial musculature. Little or no effect was observed in animal intestine. Also it

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† Product of Ciba Pharmaceutical Products, Inc., Summit, N. J.

had no direct sialogogic effect and did not increase gastric acidity. Although it had anti-adrenergic action, it exhibited no anticholinergic effects, even in high dosages.

Animal tolerance to the drug was exceptionally high and dosages far above the effector level were necessary to produce toxic symptoms, which consisted of apathy, restlessness, paralysis, contracted pupil, but normal corneal and light reflexes.

Recovery from the drug is in reverse order; that is, recovery from sympatholysis occurred sooner than from adrenolysis since the latter occurs at lower levels of the drug.

It was concluded that Regitine is a potent adrenolytic and sympatholytic drug, effective orally as well as parenterally. Also it has been reported that Regitine is more potent than either Priscoline or Dibenzamine (7).

Materials and Methods

Regitine is available in tablet form of 60 mgm. each and parenteral form, 25 mgm/c.c. The majority of cases received 50 mgm. intramuscularly and the immediate effects observed. Afterwards, the subjects were either continued on intramuscular dosages or changed to the oral route. Skin temperatures were obtained with a standard pyrometer. Room temperature and humidity could not be controlled. Blood pressures and pulse rates were taken at regular intervals. Oscillometry, employed at first, was soon abandoned because of the marked variations in readings. Subjective and objective reactions were noted and recorded.

Preparation of the patient entailed only abstinence from stimulating or depressant drugs, in particular the barbiturates. Patients in the older age group with signs of cardiac decompensation were omitted from the study. The readings of the extremities were taken on the dorsal surfaces of the digits just above the terminal interphalangeal articulation and each reading was made at the precise area previously recorded. Skin surfaces selected elsewhere were those above bony protuberance. Despite all precautions, it was realized that slight variables in readings of the pyrometer inevitably occur. Therefore, a skin temperature change of at least 2.5 F had to result before a connotation of significant change was accepted. No local reaction was encountered from the administration of intramuscular Regitine with one exception, in a patient with scleroderma. However, the reaction was attributed to the nature of the histologic changes of the skin and subcutaneous tissue rather than to any irritant property of the drug.

Results

Group I—Controls

Ten male subjects, varying in age from 25 to 61, without evidence of arterial disease were studied in this group. Each patient after preliminary readings had been made was given 50 mgm. of the agent intramuscularly. Within 15 minutes he usually experienced "more rapid and forceful beating of the heart". However, there was no substernal discomfort. The pulse had increased in rate and in force. In 30 minutes there was a very slight and transient flush and warming of the extremities. The warmth persisted throughout the preliminary period of observation. Palpitation of the heart disappeared within 30 minutes and the patient appeared quite comfortable.

The blood pressure fell an average of 20 or more mm./Hg. and remained low. Of the 10 subjects, 7 exhibited a rise in skin temperature averaging from 5.5 F. to 10.0 F. Other than the transient effects noted above, there were no untoward side reactions except in one patient. This was a 55 year old white male with a carotid sinus syndrome. The patient showed no adverse sign during the preliminary period of testing. After he returned to the ward and received another 50 mgm. of the agent, he complained of dizzy spells and of feeling faint. Within 1 hour he appeared to have recovered.

The drug was administered for periods ranging from 13 days to 10 weeks. Of the 7 patients with good response to Regitine, 5 were under oral administration and 2, intramuscular. Response to the intramuscular route was more prompt than with the oral route. In 3 patients with a response to the oral route, the skin temperature was further elevated when they were switched to intramuscular dosages. In 1 there was no change. In 4, by increasing the oral dosage, the skin temperature was further elevated. Dosage was begun with 60 mgm. orally or 50 mgm. intramuscularly, administered three times daily. The oral dosage of 360 mgm. daily generally produced the maximum response, while the maximum intramuscularly was achieved with 300 mgm. daily. Within 24 hours the skin temperature had reverted to pre-Regitine levels.

Subjectively, all 7 experienced warming of the lower extremities. Other than the transient flush in 3, and the brief palpitations in all 7, no adverse reaction was noted. The peripheral pulses were increased in rate and amplitude. In 1 patient with no skin temperature response, the pulse amplitude was increased.

Comment: Seven of 10 normal subjects showed a good response to Regitine with elevation in skin temperature and warming of the lower extremities. The intramuscular route was more effective than the oral. Adequate effect could be obtained orally. No untoward reactions other than of a transitory nature was noted except in 1 patient with a carotid sinus syndrome, who had syncope and vertigo for 1 hour.

Group II—Frost Bite

1. B. P., white male 52 years of age with a history of exposure to cold for a period of 5 days. Both feet were warm. Pulsations were good. The patient was given Regitine for 10 days with insignificant response. He later had a bilateral lumbar sympathectomy.

2. J. S., negro male 8 years of age, with a history of exposure to cold and moisture for 1 week. Both feet were edematous and the toes showed superficial gangrenous and ulcerative changes. The patient was placed on 75 mgm. intramuscular Regitine daily for a period of 13 days with good response. The ulcers healed. Roentgenologic studies revealed osteomyelitic changes in the distal phalanges of 4 toes of one foot. The digits were removed. The patient was maintained on Regitine postoperatively and the wounds healed rapidly.

3. P. B., white male 66 years of age, with a history of exposure to cold for 1 week and ulcerations of several toes on both feet. The patient had a similar episode one year previously. He was placed on 180 mgm. of Regitine daily. The response was good and the ulcerations healed. Before discharge the patient had a bilateral lumbar sympathectomy.

4. S. G., white male 32 years of age with history of exposure to cold of 4 days duration. The plantar surfaces of the toes and feet revealed superficial necrotic changes without ulceration or gross gangrene. The patient was given 360 mgm. Regitine daily for eight days with a good response. The necrotic tissue sloughed, leaving normal healthy skin.

5. S. H., white male 44 years of age with history of exposure to cold for 3 days. There were ulcerations and gangrenous changes in toes of both feet. He was placed on Regitine 200 mgm. daily

for 3 weeks. The ulcerations healed and after demarcation of the gangrenous areas in one foot, a transtatarsal amputation was performed. He later had a bilateral lumbar sympathectomy.

Comment: Five patients with frostbite were given Regitine. Four demonstrated response. Of these, 3 were on oral and the other on intramuscular administration. The patient that failed to respond had a markedly elevated skin temperature, possibly as a result of cellulitis. The vasoconstricting influences may have been removed and as a result of the local heat of the cellulitis and possible histamine-like reaction of accompanying tissue damage, the peripheral vessels were dilated. However, normal subjects in Group I showed reaction to Regitine and, unless the peripheral vessels had been dilated to the maximum with abolition of the temperature gradient, further response to Regitine might have been expected. No side reactions occurred.

Group III—Arteriosclerosis Obliterans

1. A. B., white male 64 years of age, with a history of intermittent claudication for 1 year and persistent pain in right great toe. The feet were cold and there were no palpable pulses. There was no evidence of gangrene or ulceration. The patient was on intramuscular Regitine for a period of 35 days with doses ranging up to 300 mgm. daily. There was no response and the symptoms persisted. The patient later had a bilateral lumbar sympathectomy.

2. H. J., white male 64 years of age with a history of pain for 6 weeks in the right great toe. Both lower extremities presented typical aspects of advanced organic disease with cold, discolored, feet and legs and absent pulsations. The patient was placed on oral Regitine for 39 days with doses as high as 720 mgm. daily. The skin temperature response was negligible and while on the drug the symptoms became exaggerated. The patient developed ischemic ulcerations and gangrene of the toes. Eventually both extremities had to be amputated.

3. C. D., negro male 58 years of age, with gangrene of the right great toe of 1 month's duration. He was placed on oral Regitine 360 mgm. daily for 23 days with no improvement. Gangrene progressed during the treatment period. A lumbar sympathectomy was done. Subsequently the extremity was amputated.

4. T. L., white male 76 years of age, had an amputation of the right lower extremity because of arteriosclerotic gangrene. Some time later pain developed in the left foot. He was placed on Regitine orally for 27 days with a maximum dose of 360 mgm. daily. The response was good with a skin temperature average rise of 8 degrees F. and complete relief of pain. At no time during the treatment were the pulses palpable.

5. S. A., negro male 66 years of age, had an amputation of one lower extremity in 1943 because of gangrene. Three weeks prior to the present admission he experienced pain in the remaining foot. Ulcers developed in two toes. Oral Regitine was given for 15 days with a maximum dose of 240 mgm. daily. Response was good with healing of the ulcers and relief of pain. Before discharge the patient had a lumbar sympathectomy.

6. M. R., white female 86 years of age with pain and ulcerations of left foot for almost 1 year. The patient was a diabetic and she was admitted to the hospital in coma. After her diabetes was controlled, a course of Regitine was attempted, despite her advanced age. She received 240 mgms. of Regitine with remarkable results. The pain disappeared and the ulcerations slowly healed. During the course of treatment, no alteration of diabetic regimen was necessitated because of the drug.

7. H. H., white male 67 years of age with gangrene of right great toe for a month. He was placed on Regitine for 2 weeks with doses ranging as high as 480 mgm. daily with no response. The gangrene spread. He later had a lumbar ganglionectomy and amputation.

8. G. B., white male 72 years of age with ulcers of both legs for three months. He was placed on Regitine 300 mgm. intramuscularly daily for 8 days and then switched to 360 mgm. orally per day for 6 days. There was no response to the drug. He had a bilateral lumbar sympathectomy, with subsequent healing of the ulcers.

9. R. L., 65 year old white male with pain on walking, relieved by rest, for 6 months. He received

Regitine in doses up to 720 mgm. daily for 24 days with no skin temperature response. However, the pain disappeared and he could walk for greater distances.

10. J. B., 72 year old white male with pain on walking, relieved by rest, for over 1 year. He received up to 720 mgms. of Regitine daily for 1 month. Response was good, both in skin temperature elevation and relief of pain. He developed ectopic ventricular beats, as demonstrated on ECG (Fig. 2) which disappeared when the drug was discontinued.

11. W. D., 67 year old white male with ulcerations resulting from trauma to both legs. He received 300 mgm. of Regitine intramuscularly daily for 3 weeks with no response. He later had a bilateral lumbar sympathectomy and the ulcerations healed.

12. E. R., 55 year old white male with ulcerations of toes for several days, as a result of exposure to cold. Examination revealed an underlying peripheral arterial insufficiency in both extremities. He was given 360 mgms. of Regitine daily for 3 weeks with good response and healing of lesions. He later had a bilateral lumbar sympathectomy.

13. W. S., 79 year old white male with gangrene of right great toe for 1 month. He received Regitine daily for $2\frac{1}{2}$ weeks in doses of 240 mgms. daily with no response. There was no response to lumbar sympathectomy and the extremity was later amputated.

FIG. 1. Response to Regitine

CONDITION	GOOD	POOR	TOTAL
Control.....	7	3	10
Frost bite.....	5	1	6
Arteriosclerosis obliterans.....	9	9	18
Buerger's disease.....	2	0	2
Acute arterial occlusion.....	0	1	1
Varicose ulcer.....	2	0	2
Raynaud's disease with scleroderma.....	1	0	1
Raynaud's phenomenon.....	1	0	1
Immersion feet with ulcerations.....	1	0	1
Trophic ulcer.....	1	0	1
Hyperhidrosis.....	2	0	2
Thrombophlebitis.....	0	1	1
Total.....	31	15	46

14. R. A., 69 year old white female diabetic with pain and cyanosis of right great toe and diminishing exercise tolerance for 3 months. She received Regitine 360 mgms. daily for a week. The skin temperature response was good, but the toe became gangrenous. She later had a lumbar sympathectomy, but the extremity finally had to be amputated.

15. D. A., 60 year old white male with a history of exposure to cold for several days. Subsequent examination revealed peripheral arterial insufficiency. The extremities were dusky and the venous filling time was prolonged. He was placed on Regitine 360 mgms. daily orally for $2\frac{1}{2}$ weeks with good response.

16. J. R., 55 year old Negro male with an ulcer of the right heel for a month. He was placed on 360 mgms. of oral Regitine daily for $2\frac{1}{2}$ weeks with no response. He developed nausea and vomiting, which stopped after the drug was discontinued. He later had a lumbar sympathectomy with healing of the lesion.

17. C. L., 52 year old Negro male with gangrene of the left great toe of 2 weeks duration. He received Regitine 360 mgms. orally daily for 10 days with no response. The dosage was increased to 720 mgms. daily, still with no response. He developed nausea and vomiting, which disappeared after the drug was discontinued. He later had a transmetatarsal amputation.

18. R. S., 41 year old Negro male, diabetic, with an ulcer of the plantar surface of the right foot for 1 month. After the diabetes was under control, he was placed on Regitine orally 360 mgms.

daily for 2 months. The response was good and the ulcer healed. There was no change in diabetic regimen while he was on the drug.

Comment: Of 18 patients 9 showed response and were apparently benefitted by Regitine. Lumbar sympathectomy was considered but not performed in 2 cases. In 1 (M. R.) the patient was considered a poor risk. The response to Regitine was unusual for someone her age and the relief obtained, gratifying. The other (R. S.) did well enough with Regitine so that sympathectomy was not done. Three of the patients had diabetes and the drug produced no apparent change in blood sugar levels. Two patients had side effects, nausea and vomiting, severe enough to necessi-

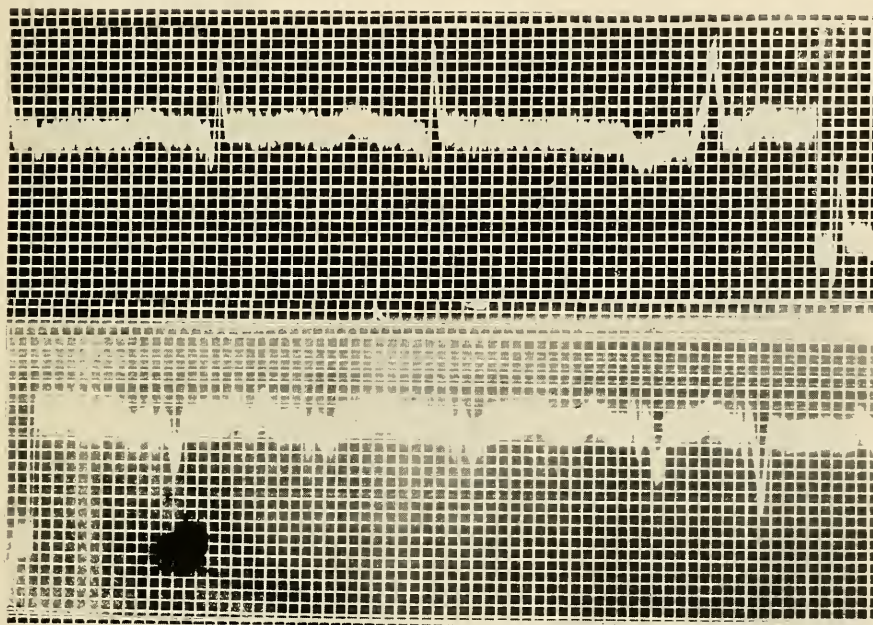


FIG. 2. ECG lead illustrating ectopic ventricular beats during administration of Regitine. J. B., 72 year old white male with arteriosclerosis obliterans. (Top)

FIG. 3. ECG lead showing auricular and ventricular ectopic beats during the administration of Regitine. R. R., 58 year old white male with acute arterial occlusion. (Bottom)

tate discontinuing the drug. One patient exhibited ectopic ventricular beats which disappeared when the drug was stopped.

Group IV—Thromboangiitis Obliterans

1. L. W., a 37 year old Negro male had an amputation of 1 extremity because of gangrene. Shortly thereafter he developed intermittent claudication of the other. He received oral Regitine 360 mgms. daily for 30 days with complete relief of distress. He later had a lumbar sympathectomy.
2. A. M., 55 year old white male had intermittent claudication for 3 months. He received oral Regitine 240 mgms. daily for 2½ weeks with alleviation of pain.

Comment: The 2 patients exhibited satisfactory response to the drug.

Group V—Miscellaneous

1. J. S., white male 55 years of age, with Raynaud's disease for 3 years and scleroderma for almost 1 year. There was marked intolerance to cold and tightening of the skin about the arms, shoulders, hands, legs, feet, and chest. There were numerous ulcerations on the fingers and trophic ulcers of the lower extremities. There was difficulty in swallowing. The patient was placed on Regitine with a good response. The ulcerations healed and to date show no tendency to recur. A wider range of motion of the upper extremities has developed.

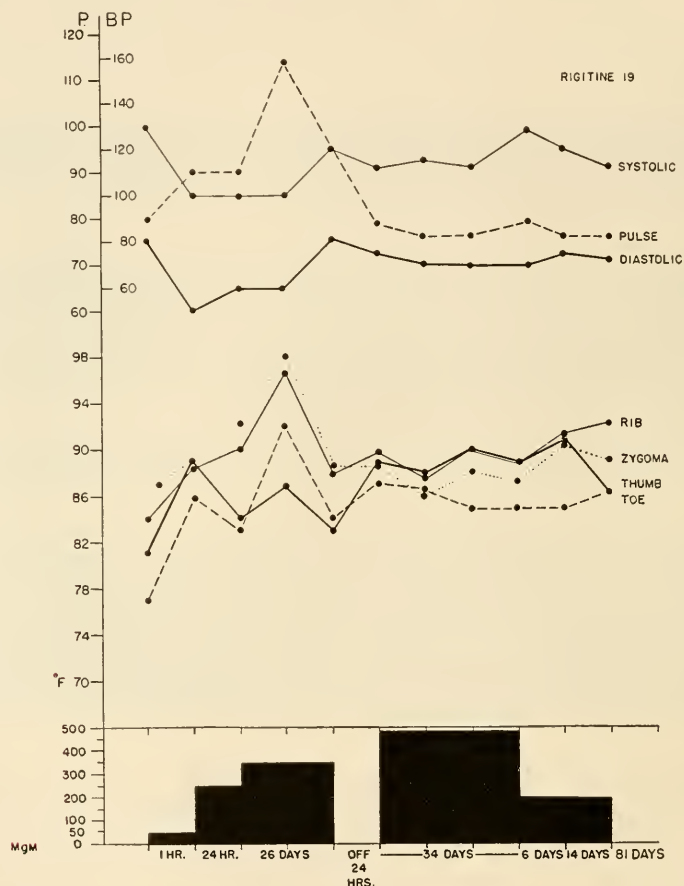


FIG 4

The patient received maximum dosage of 480 mgm. orally. Skin temperature was demonstrated. He has been on the drug for 81 days and at the time of this report there has been no evidence of intolerance or toxicity. For the past 67 days he has been treated as an out-patient. Present dosage is 240 mgm. daily without diminution of response. (Fig. 4)

2. J. F., 42 years of age, white male, with stasis ulcers of the lower extremities. He was found to have a marked intolerance to cold. His fingers turned blue on exposure and on warming, very slowly returned to normal color. Complete relief was obtained with Regitine which the patient received intramuscularly for a period of 20 days in doses of 150 mgm. daily.

3. W. B., white male 47 years of age, with ulcerations of both feet as a result of exposure and dampness. A diagnosis of immersion feet was made and the patient was placed on oral Regitine 180 mgm. daily for 16 days. The response was good with healing of the lesions. (Fig. 5)

4. S. B., white male 49 years of age, with a trophic ulcer at the base of the right toe of 1 year's duration. Pulses were normal. The patient received Regitine for 15 days with a maximum dose of 240 mgm. daily. The response was good and the ulcer healed.

5. E. S., white male 40 years of age, with a diagnosis of hyperhidrosis of the lower extremities. The patient received Regitine for 27 days with complete relief. Symptoms could be controlled on 180 mgm. daily. Originally he was placed on 540 mgm. Regitine daily.

6. G. H., negro female 23 years of age, with thrombophlebitis. The patient received up to 300 mgm. of Regitine daily intramuscularly without response.

7. H. L., white male 59 years of age with a varicose ulcer of 6 months duration. He received oral Regitine 360 mgms. for 1 week with good skin temperature response. He later had a sympathectomy.



FIG. 5 W. B., 47 year old White male with immersion feet and ulcerations, showing result after treatment.

8. J. S., white male 54 years of age with a varicose ulcer of 2 years duration. He received 360 mgms. daily orally for 1 week with good skin temperature response. He later had a lumbar sympathectomy.

9. A. K., white male 54 years of age with abnormal perspiration of feet and epidermophytosis. He was given oral Regitine 360 mgms. daily for 20 days. There was no skin temperature response, but the perspiration was controlled and the skin infection cleared.

10. R. R., white male 58 years of age developed acute arterial occlusion of the right lower extremity. He received Regitine intramuscularly 300 mgms. daily for 13 days with no response. A lumbar sympathectomy was also of no avail. He developed gangrene and the extremity was amputated. While on Regitine the patient developed ectopic auricular and ventricular beats. (Fig. 3) When the drug was discontinued these abnormalities ceased.

Comment: Of nine patients with vasomotor and vasospastic disorders, 8 demonstrated good response with alleviation of symptoms and healing of lesions. The pa-

tient with acute arterial occlusion did very poorly as with lumbar sympathectomy. Two of the patients complained of nasal congestion. It was not necessary to discontinue the drug. This complaint cleared spontaneously in 1 week.

Blood pressure

Fourteen patients with hypertension were studied. All patients exhibited an immediate drop in blood pressure following an initial dose of 50 mgm. of Regitine. One developed syncope and the drug was discontinued. The results are tabulated in Fig. 6. In 11 the blood pressure remained lowered as long as the drug was administered. When discontinued the blood pressure rose to pre-Regitine levels. The pulse rate generally accelerated, but during therapy receded to pre-Regitine levels. In one patient (M. S.) the blood pressure showed immediate response but gradually rose to pathologic levels. The dosage was increased to a maximum of 720 mgm. daily. The blood pressure in each instance dropped, but the drop was less each time and then the pressure would rise to its previous level. Despite failure to keep the blood pressure down, the patient was relieved of her subjective symptoms, which consisted of severe occipital headaches and lassitude.

FIG. 6. Blood Pressure—51 Cases

	DROP	NO CHANGE ~	RETURN DURING TREATMENT	RETURN AFTER TREATMENT	NOT CHECKED
Hypertension 14 cases.....	11	3	2	11	0
Normotension 37 cases.....	24	13	10	12	2

Thirty-seven normotensive individuals were observed. Twenty-four experienced an initial fall in blood pressure. Thirteen showed no effect. Of the 24 with a fall, in 10 the blood pressure rose to normal levels during treatment and in the other 12, the blood pressure returned after the drug was discontinued. Follow-up in the last 2 was not obtained.

Sympathectomy

The clinical evaluation of sympathectomy with reference to its recommendation for various peripheral vascular disorders has not reached complete accord. That the procedure is invaluable in certain disorders is indisputable. Its application in other aspects of surgical effort remains controversial. Aside from this there is the problem of the effectiveness or completeness of the procedure itself. It is not within the scope of this paper to linger on the discussion of its applicability to the varied vascular disorders. However, it is felt that the development of a simple test both in prediction and in postoperative evaluation may assist in clarifying the matter and conceivably place sympathectomy in its justifiable role.

With this view 29 patients with lumbar sympathectomy were studied. Pathologic confirmation of ganglion tissue was necessary before the case was accepted for study. The interval period between surgery and the test varied from 7 days to 5 years.

Of these 29 patients, 20 received pre-operative Regitine studies. Following surgery, the response to Regitine was re-evaluated. The results are recorded in Fig. 7.

It may be noted from this small series that sympathectomy is more effective than Regitine in producing sympathetic impulse block. Regitine adequately predicted the outcome of sympathectomy and later verified the effectiveness of each surgical procedure.

The second group of 9 cases, in which pre-operative Regitine studies were not done, reveals the following results: Five demonstrated a response to Regitine following surgery, the greatest response being in the 1 patient who had sympathectomies 3 and 5 years ago. In 4 there were no responses to a postoperative course of Regitine. The observations on the aforementioned 5 patients do not necessarily indicate inadequate sympathectomies. Rather, it might be said that they lend support to the idea that after a lapse of time the peripheral vascular status of the sympathectomized limb returns to pre-sympathectomy level.

In individuals who have had sympathectomy and who later develop pathologic states, a drug of the type of Regitine might be a valuable adjunct. There is sufficient evidence to warrant a trial of this type drug in sympathectomized limbs which have progressive vascular abnormality.

FIG. 7 Sympathectomy Study—29 Cases
Skin Temperature

PRE-SYPHATHECTOMY		POST-SYPHATHECTOMY		POST-SYPHATHECTOMY (NO PRE-OP. STUDY)	
Increase	No change	Increase	No change	Increase	No change
15	5	4	16	5	4

Miscellaneous data

Pulse Rate: In the group of hypertensive patients, all experienced an increase in rate. Eight of these had an actual tachycardia, which proved to be transient. In all but 2, the pulse rate reverted to pre-Regitine levels during treatment. In the remaining 2, after the drug was discontinued, the rate receded to former levels within 24 hours.

In the normotensive group, 30 had an increase in pulse rate and of these, 10 had tachycardia, again only transient. Seven revealed no significant change in pulse rate. Of the group of 30 with pulse changes, 22 reverted to pre-Regitine levels during drug administration, and the other 8, after the drug was discontinued.

Laboratory: There were 4 diabetics in this study. In none was there a change in fasting blood sugar attributable to the drug. No change in regimen was necessitated upon administration of the drug. There were no significant hematologic or urinary changes during courses of therapy.

Electrocardiogram: Eight patients were studied. Of this group, 2 demonstrated ectopic beats which disappeared when the drug was discontinued.

DISCUSSION

Longino and his associates (14) observed a fall in blood pressure in 12 subjects with Regitine. The drug was tried on patients with Buerger's disease, Raynaud's

disease and arteriosclerosis obliterans without benefit. He also mentions instances of side reactions including nasal congestion, ptosis of the lids and flushing. He finds the drug is effective orally. Grimson (15) reported the successful use of Regitine in the diagnosis of pheochromocytoma. The drug also was used effectually during surgery to prevent precipitous blood pressure fall associated with extirpation of the tumor.

The drug is a potent sympatholytic. Regitine apparently blocks sympathetic impulses that maintain normal smooth muscle, and elastic tone, thereby permitting vasodilatation. Vasodilatation was noted in both normal and pathologic instances.

The results with organic obliterative diseases were disappointing. In the light of pathologic dynamics, however, this should be anticipated. In instances wherein there were responses to the drug, it is apparent that the vessels were not totally occluded. The concomitant vasoconstriction that occurs with diseased states was relieved, thereby alleviating in part the ischemia of the limb.

There was a greater degree of success with the vasospastic disorders. Of particular interest was the beneficent result in the one case of Raynaud's disease with scleroderma. Frost bite patients previously treated at this hospital, had a longer stay than those who responded to Regitine.

Blood pressure response was consistent in an immediate fall with a single small dosage. Almost equally consistent was the gradual rise back to pre-Regitine levels. In the light of the results of this small number of studies, evidence suggests that the drug would prove to be of little value in the treatment of hypertension. There may be, however, the exception in those instances where distressing symptoms might be relieved.

The drug is not as effective as lumbar sympathectomy. It appears to be of value in pre-operative and postoperative evaluation. Certainly in sympathectomized limbs with persistent vascular pathology, a trial of this type of drug is indicated. It is generally believed that inasmuch as the sympatholytic is unable to limit its influences to desired areas, drugs of this type are best reserved for generalized vasospastic disorders, while sympathectomy is indicated for more or less localized vascular disease states. The observations in this study tend to lend support to this precept.

Finally, in the overall aspects of therapy in peripheral vascular disease, Regitine and similar drugs retain only an adjunct role. The agent would serve to enhance the accepted supportive methods of treatment.

Satisfactory response may be obtained from rather small doses. Apparently in those cases which respond to this type of drug, dosages of 60 to 120 mgm. orally, or 50 to 100 mgm. intramuscularly 3 or 4 times daily are sufficient. The drug is well tolerated even in very high dosages. Age and the degree of generalized arteriosclerosis are apparently no contraindications to the use of Regitine, provided there is no cardiac decompensation, coronary or other cardiac disorder. Because the renal blood flow is reduced, it would be inadvisable to use the drug in cases of known or suspected renal pathology.

CONCLUSIONS

1. Regitine is an effective sympatholytic, well tolerated, and effective in oral dosages.

2. It is less effective than lumbar sympathectomy.
3. It is of value in the prediction of effect of sympathectomy and in post-sympathetic evaluation.
4. It is probably of little value in the treatment of hypertension.

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BIBLIOGRAPHY

1. WAKIN, K. G., PETERS, G. A., AND HORTON, B. T.: The effects of a new sympatholytic drug on the peripheral circulation in man, *J. Lab. & Clin. Med.* **35**: 2, 1950.
2. AHLQUIST, R. P., HUGGINS, R. A., AND WOODBURY, R. A.: The pharmacology of benzyl-imidiazoline (Priscol), *J. Pharmacol. & Exper. Therap.* **89**: 271, 1947.
3. GRIMSON, K. S., REARDON, M. J., MARZONI, F. A., AND HENDRIX, J. P.: The effects of Priscol (2-Benzyl-4,5-Imidiazoline HCl) on peripheral vascular diseases, hypertension and circulation in patients, *Ann. Surg.* **127**: 968, 1948.
4. ROGERS, M. P.: Use of a sympatholytic drug (Priscol): From a point of view of a general surgical practitioner, *J. A. M. A.* **140**: 272, 1949.
5. GOLDENBERG, M., SNYDER, C. N., AND ARANOW, H.: New test for hypertension due to circulating epinephrine, *J. A. M. A.* **135**: 971, 1947.
6. NICKERSON, M. AND GOODMAN, L. S.: Pharmacological properties of a new adrenergic blocking agent, *J. Pharmacol. & Exper. Therap.* **84**: 105, 1945.
7. MEIER, R. AND YONKMAN, F. F.: A new antiadrenergic agent, 2-(N-p'-tolyl-N-m'-hydroxyphenyl aminoethyl)-Imidiazoline HCl (C-7337). *Fed. Proc.* **8**: 1,—Part I. 319, 1949.
8. MEIER, R., YONKMAN, F. F., GRAVER, B. N., AND GROSS, F.: A new imidiazoline derivative with marked adrenolytic properties. *Proc. Soc. Exp. Biol. & Med.* **71**: 70, 1949.
9. MORRISON, J. L., LANGSTON, R. J., AND RICHARDSON, A. P.: Effect of pilocarpine on epinephrine reversal produced by 2-(N-p'-tolyl-N-M'-hydroxyphenyl) imidiazoline HCl. *Proc. Soc. Exp. Biol. & Med.* **72**: 622, 1949.
10. JONES, P. S., ET AL.: Relationship between physiological disposition and adrenolytic action of 2-(N-p'-tolyl-N-M'-hydroxyphenyl) imidiazoline HCl (C-7337). *Proc. Soc. Exp. Biol. & Med.* **73**: 366, 1950.
11. WALKER, HARRY A., ET AL.: The effect of C-7337 on carotid sinus reflex and on pressor and peripheral vascular actions of epinephrine and nor-epinephrine. *J. Pharmacol. & Exper. Therap.* **98**: 33, 1950.
12. WOODBURY, R. A., BRAVER, S. D., AND FERGUSON, T. M.: Competitive action of certain vasoconstrictors and vasodilators. *J. Pharmacol. & Exper. Therap.* **98**: 37, 1950.
13. WARREN, M. R., WOODBURY, R. A., AND TRAPOLD, J. H.: Pharmacological studies on 2-(N-p'-tolyl-N-m-(hydroxyphenyl-aminoethyl) imidiazoline HCl (C-7337). *Fed. Proc.* **8**: 1, Part 1: 343, 1949.
14. LONGINO, F. H., ET AL.: Effects of a new quaternary amine and a new imidiazoline derivative on the autonomic nervous system. *Surgery* **26**: 421, 1949.
15. GRIMSON, K. S., ET AL.: Treatment of a patient with pheochromocytoma. Use of an adrenolytic drug before and after operation. *J. A. M. A.* **140**: 1273, 1949.

TORULOSIS OF THE CENTRAL NERVOUS SYSTEM IN THE LABORATORY ANIMAL*

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INTRODUCTION

The fatal outcome of *Torula meningo-encephalitis* has stimulated recent investigators to seek an effective method of treatment. Because the disease is rare, clinical investigation is limited and any extensive search for a therapeutic agent must of necessity be performed in the laboratory. Despite the obvious advantages of experimental therapeutics in animals, most of the published reports have concerned *in vitro* studies. In order to demonstrate a cure for central nervous system torulosis in animals, one must consistently produce central nervous system torulosis in those animals. The purpose of this study was to determine if central nervous system torulosis could be produced consistently in the commonly used laboratory animals.

METHODS

Three individual strains of *Cryptococcus neoformans* were employed. These organisms were obtained from the spinal fluid culture of patients suffering from central nervous system torulosis, 2 from acute cases and 1 (Strain III) from a patient who followed an unusually long course (15). In each case the organism was identified as *Cryptococcus neoformans* by culture and by direct smear. In 2 of the 3 cases the patient had expired and the diagnosis was confirmed at autopsy. The inoculant was composed of a torula suspension obtained from a 48 hour broth culture which had been centrifuged and diluted to half volume with normal saline.

The animals selected for this experiment were: mice, guinea pigs, rabbits, cats and dogs. Two of each species were inoculated with the 3 strains making a total of 10 animals inoculated with each strain. Two control animals were employed in each group. The route of inoculation was intracranial in each instance however, the technique varied as follows:

Mice and guinea pigs: Under ether anesthesia a 26 gauge hypodermic needle, 3 mm. in length, was inserted through the squamosal suture at a point midway between the eye and the ear. At a depth of 3 mm., 0.1 cc. of torula suspension was injected intracerebrally.

Rabbits: Two methods of inoculation were employed. Under Nembutal anesthesia a trephine opening was made in the skull in the parietal region. The dura was exposed and 0.25 cc. torula suspension was injected through the dura into the sub-arachnoid space. The wound was then closed. Five days later, 0.25 cc. of torula suspension was injected intrameningeally through the trephine opening. Two days later a similar dose was administered in the same manner.

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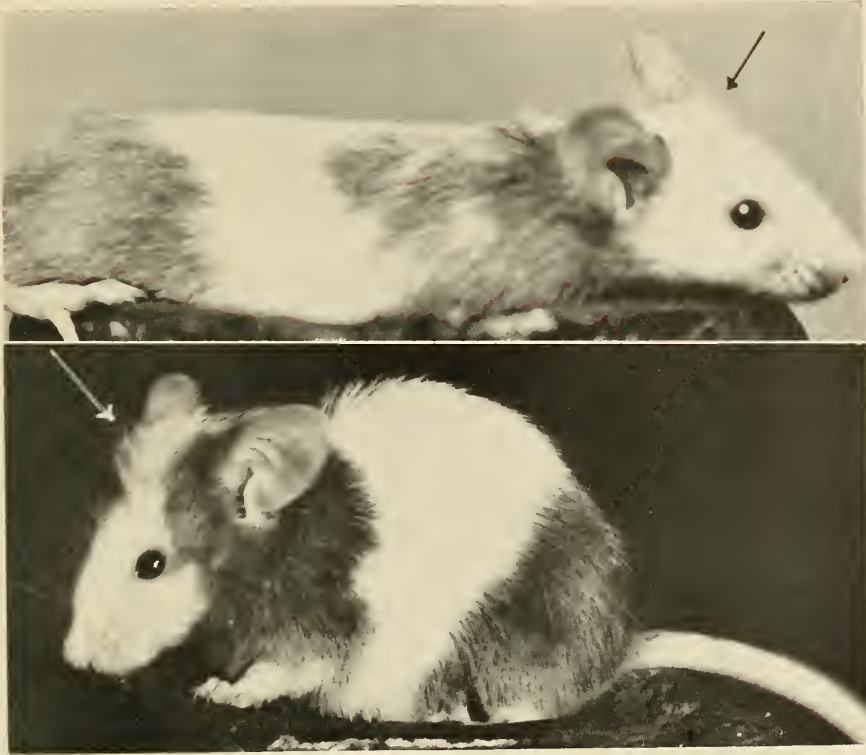


FIG. 1. Photograph of mouse taken on seventh day following intracerebral inoculation with *Cryptococcus neoformans*. There is only minimal occipital expansion of the skull at this time (arrow). (Top)

FIG. 2. Photograph of mouse taken on ninth day following intracerebral inoculation with *Cryptococcus neoformans*. Note that the occipital expansion (arrow) of the skull has greatly increased and that the mouse appears clinically ill.

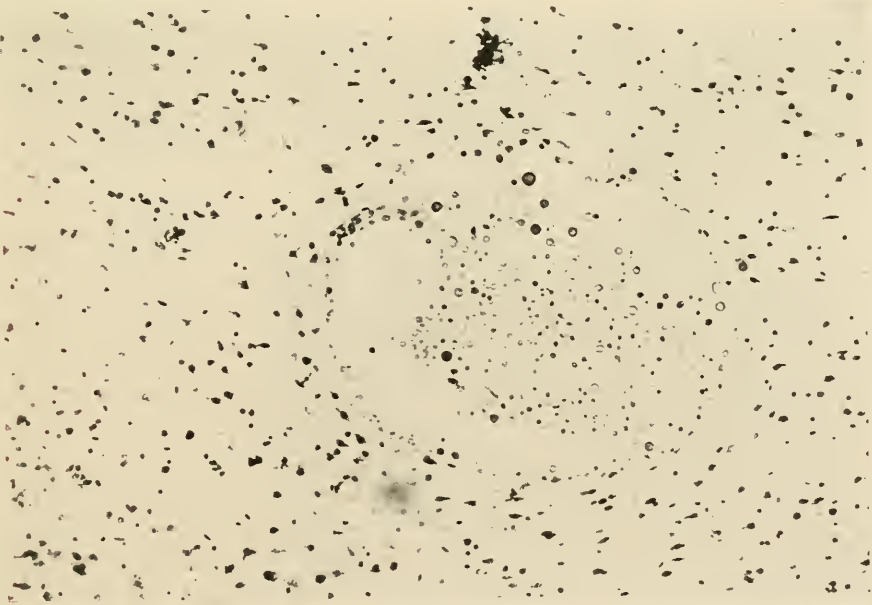


FIG. 3. Typical torula cyst in mouse brain. Note the variability in size and staining characteristics.

In the second group of rabbits an 18 gauge hypodermic needle was inserted 13 mm. into the "soft spot" of the frontal region of the skull, and 0.2 cc. of torula suspension injected.

TABLE I
Clinical and Pathologic Observations on Animals following Intracranial Inoculation of Cryptococcus Neoformans

ANIMAL	DAYS LIVED	INTRACRANIAL ROUTE OF INOCULATION	CLINICALLY ILL	HYPERTEMIA AND EDEMA OF BRAIN AT AUTOPSY	CULTURE FROM AUTOPSED BRAIN	MICRO. SECTION
<i>Strain I</i>						
Mouse I	Expired 10th day	suture line	+	+	+	4+ meningeal reactions; torula seen
Mouse II	Expired 11th day	suture line	+	+	+	4+ meningeal reaction; torula seen
Guinea pig I	Expired 12th day	.1 cc. frontal bone	+	+	+	3+ meningeal reaction; no torula seen
Guinea pig II	Animal expired following inoculation					
Rabbit I	Killed 76th day	.2 cc. via frontal bone	+	+	+	3+ meningeal reaction; no torula seen
Rabbit II	Expired 12th day	.2 cc via frontal bone	+	+	+	4+ meningeal reaction; no torula seen
Cat I	Expired 31st day	via frontal bone	+	+	+	3+ meningeal reaction; no torula seen
Cat II	Expired 35th day	via frontal bone	+	+	+	4+ meningeal reaction; torula seen
Dog I	Expired 9th day	transorbital	Abscess longitudinal fissure + + +			1+ meningeal reaction; no torula seen
Dog II	Expired 2nd day	trepine	Animal expired following trephination			4+ meningeal reaction; torula seen

Cats: An 18 gauge needle was inserted 13 mm. into the left frontal bone approximately 13 mm. above the midpoint of the supra-orbital ridge. The subarachnoid space in the cats was entered readily and consistently by this method and 0.6 cc. torula suspension was injected into the subarachnoid space of each cat.

Dogs: Two methods of inoculation were employed. A trephine opening in the left frontal region was made and the dura exposed. A torula suspension of .6 cc. was injected into the subarachnoid space and the wound closed. In the second group of dogs an 18 gauge needle was inserted transorbitally i.e. superior to the globe through

TABLE II

ANIMAL	DAYS LIVED	INTRACRANIAL ROUTE OF INOCULATION	CLINI- CALLY ILL	HYPER- EMIA AND EDEMA OF BRAIN AT AU- TOPSY	CUL- TURE FROM AUTOP- SIED BRAIN	MICRO. SECTION
<i>Strain III</i>						
Mouse I.....	Expired 15th day	.1 cc. via su- ture line	+	+	+	4+ meningeal reaction; torula seen
Mouse II.....	Expired 13th day	.1 cc. via su- ture line	+	+	+	4+ meningeal reaction; torula seen
Guinea pig I.....	Animal expired following inoculation					
Guinea pig II.....	Expired 20th day	.1 cc. frontal bone	+	+	+	1+ meningeal reaction; no torula seen
Rabbit I.....	Expired 6th day	.2 cc. frontal bone	+	+	+	4+ meningeal reaction; no torula seen
Rabbit II.....	Animal expired following inoculation					
Cat I.....	Killed 72nd day	.6 cc. via frontal bone	—	+	+	3+ meningeal reaction; no torula seen
Cat II.....	Killed 72nd day	.6 cc. via frontal bone	—	—	—	2+ meningeal reaction; no torula seen
Dog I.....	Killed 72nd day	.6 cc. via trephine	+	+	+	4+ meningeal reaction; no torula seen
Dog II.....	Killed 72nd day	.6 cc. via transor- bital	+	+	—	1+ meningeal reaction; no torula seen

the supra-orbital plate and dura and into the subarachnoid space. At a depth of 2.5 cm. a torula suspension of 0.6 cm. was injected.

RESULTS

The central nervous system of each of the 5 species of laboratory animals employed was successfully infected with *Cryptococcus neoformans* by direct intracranial inocula-

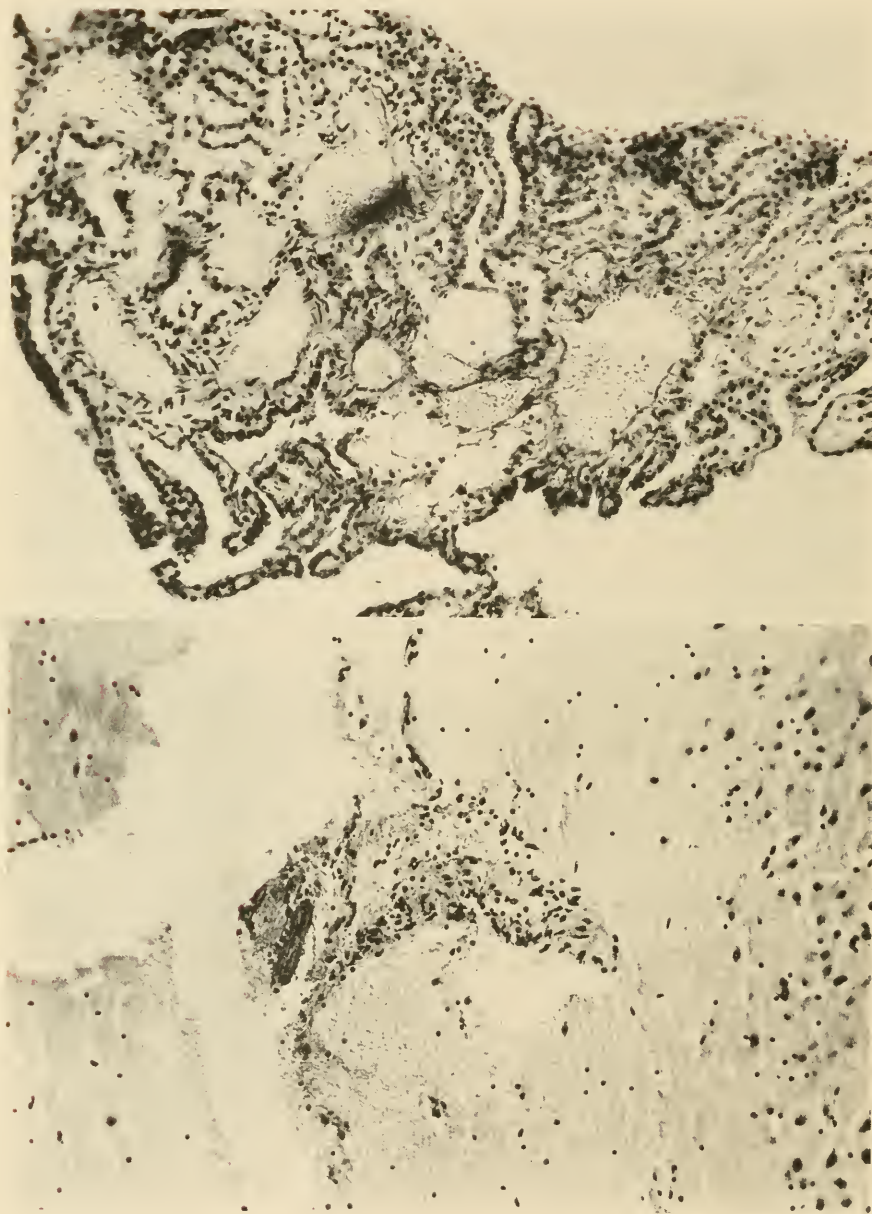


FIG. 4.

FIG. 4. Guinea pig brain following intracerebral inoculation with *Cryptococcus neoformans*. Note the meningeal reaction with hyperplasia of meninges and infiltration of chronic inflammatory cells. No organisms are seen.

FIG. 5.

FIG. 5. Section from rabbit inoculated intracerebrally with torula fungus. Note the extensive chronic meningeal reaction with the presence of inflammatory cells and fibroblasts. An organism is noted to the left of the center of this photograph.



FIG. 6.

FIG. 6. Cat inoculated intracerebrally with torula fungus. Section shows a portion of the choroid plexus infiltrated with lymphocytes and also shows hyperplasia as is often seen in a choroid plexitis.

FIG. 7.

FIG. 7. Torula meningo-encephalitis in a dog inoculated intracerebrally. Note the inflammatory reaction involving the cortex as it follows along a dip of the arachnoid. Chronic inflammatory cells are seen with hyperplasia of the meninges.

tion. The criteria for successful infection in this investigation were: (1) Clinical evidence of illness of the animal; (2) Ability to culture the fungus from the autopsied brain upon death of the animal or at time the animal was sacrificed; (3) Microscopic

TABLE III

ANIMAL	DAYS LIVED	INTRACRANIAL ROUTE OF INOCULATION	CLINI- CALLY ILL	HYPER- EMIA AND EDEMA OF BRAIN AT AU- TOPSY	CUL- TURE FROM AUTOP- SIED BRAIN	MICRO. SECTION
<i>Strain IV</i>						
Mouse I	Expired 10th day	.1 cc. via su- ture	+	+	+	4+ meningeal reaction; torula seen
Mouse II.	Expired 14th day	.1 cc. via su- ture	+	+	+	4+ meningeal reaction; torula seen
Guinea pig I.	Expired 10th day	.1 cc. via frontal bone	+	+	+	3+ meningeal reaction; no torula seen
Guinea pig II	Animal expired following trephination and inoculation					
Rabbit I.	Killed 76th day	.2 cc. via frontal bone	+	+	+	4+ meningeal reaction; no torula seen
Rabbit II.	Killed 76th day		+	+	+	4+ meningeal reaction; torula seen
Cat I.	Killed 72nd day	.6 cc. via frontal bone	-	+	+	1+ meningeal reaction; no torula seen
Cat II.	Killed 72nd day	.6 cc. via frontal bone	-	-	-	3+ meningeal reaction; no torula seen
Dog I.	Killed 72nd day	.6 cc. via transor- bital	+	+	+	2+ meningeal reaction; no torula seen
Dog II	Killed 72nd day	.6 cc. via trephine	-	-	-	1+ meningeal reaction; no torula seen

evidence of meningo-encephalitis often with cyst formation and *Cryptococci* in the autopsied brain.

Clinically the animals which were ill demonstrated weight loss, anorexia, and weakness. When these signs were present they became obvious at the beginning of

the second week following inoculation. The mouse showed the most marked clinical evidence of illness, and it was noted that the mouse showed a characteristic deformity of the skull as the illness progressed. This deformity consisted of occipital expansion of the skull, presumably resulting from increased intracranial pressure. This ballooning of the posterior portion of the skull appeared on the eighth or ninth day following inoculation in the animals subjected to strains I and IV. The animals inoculated with strain III failed to show consistently the deformity and, when present, it appeared on the fourteenth to sixteenth day. Each mouse inoculated was infected. All of the guinea pigs which survived the inoculation procedure (one of each strain) were successfully infected. All of the rabbits, except one which died as the result of the inoculation procedure, were successfully infected. Four cats showed no clinical evidence of being infected; only those inoculated with strain I appeared ill. Both cats inoculated with strain I, cat I of strain III and cat I of strain IV yielded positive cultures from the autopsied brain. Dog II of strain I expired following trephination and inoculation. Dog II of strain IV did not appear clinically ill, and a positive culture was not obtained from the autopsied brain. Dog II of strain III appeared ill but did not produce a positive torula culture of the brain at time of autopsy. The remainder of the dogs were successfully infected. On the fourth day following inoculation, lumbar punctures were done on the inoculated dogs. The spinal fluid of dog I of strain III and dog I of strain IV yielded a positive torula culture. Other dog spinal fluid cultures were negative. It is of interest that those dogs which were inoculated directly through a trephine opening showed no better results than those inoculated by the transorbital route. It would appear that the transorbital route is the method of choice in that results were as consistent and the technique more easily and more rapidly accomplished.

In autopsying the animals the gross pathologic changes noted included hyperemia, swelling and edema of the brain. Microscopic examination of sections of the autopsied brain uniformly revealed a meningo-encephalitis. In mice, cyst formation with torula organisms present was consistently found. Although this was not a constant finding in the other animals, at least one animal in each of the species showed cyst formation and torula organisms on microscopic examination of the autopsied brain.

DISCUSSION

Inoculation of the laboratory animal with *Cryptococcus neoformans* by the intraperitoneal, intradermal, intra-arterial, intravenous, intramuscular, subcutaneous, intratesticular and intraspinal routes has not uniformly produced torulosis of the central nervous system despite the attempts of numerous investigators (1, 2, 3, 4, 5, 6, 7, 8). Since this study was concerned primarily with torulosis of the central nervous system, it was felt that direct intracranial inoculation would be the method of choice for infecting the animals. The technique of direct intracranial inoculation of *Cryptococcus neoformans* was probably first carried out by Fitchett and Weidman (9) who inoculated mice and cats intra-meningeally; Levin (10) inoculated mice intracerebrally; Shapiro and Neal (11) inoculated rabbits "intracranially"; and Weidman and Radcliffe (12) inoculated cats intra-meningeally.

The role of body temperature in central nervous system torulosis has thought to be a factor in determining susceptibility and a possible factor in therapeutics. The average body temperature of the animals included in this experimental study varied and are as follows: mouse, 99.1 F; rabbit 103.2 F; guinea pig, 102.2 F; cat 101 F and dog 100.8. F. The rabbits have the highest temperature and were the most difficult to successfully inoculate. The relationship of body temperature to susceptibility has been shown by Kuhn (16-17) in a well executed experiment. He found however, that those animals intracerebrally injected showed less variation in susceptibility as compared to other routes of inoculation.

The application of these studies to the diagnostic aspect of torulosis has been remarked upon in Henrici's *Molds, Yeasts, and Actinomyces* (13): "An examination of the culture may not give sufficient basis for the differentiation of *C. neoformans* from similar saprophytic species. In such cases it is useful to inject 0.05 ml. of a suspension of the fungus intracerebrally into mice. When so injected the pathogen produces typical gelatinous masses of budding cells in the meninges and within 5 to 15 days (depending upon the dosage and virulence of the strain) causes death of the animal." In the study here reported, the mice inoculated with strain III failed to show consistently the deformity of the skull which appeared in mice inoculated with strains I and IV. When this ballooning of the posterior portion of the skull appeared in mice inoculated with strain III it appeared on the fourteenth to sixteenth day following inoculation as contrasted with the eighth or ninth day in animals inoculated with strains I and IV. Wagner and Smith (14) have devised and used such a method of mouse inoculation as a means of determining the virulence of various strains of *Cryptococcus neoformans*.

In this investigation it was demonstrated that central nervous system torulosis can be produced in mice, guinea pigs, rabbits, cats and dogs by direct intracranial inoculation. It is felt that the mouse is the animal of choice for experimental work in torulosis since it may be infected consistently by the technique described and since it pursues a more consistent clinical course.

SUMMARY

1. Employing various methods of intracranial inoculation of three different strains of *Cryptococcus neoformans*, an attempt was made to produce torulosis of the central nervous system in mice, guinea pigs, rabbits, cats and dogs.
2. In each species of animal central nervous system torulosis was produced as evidenced by clinically ill appearance of the animal, hyperemia and edema of brain at autopsy, positive torula culture from autopsied brain, and histologic appearance of the autopsied brain.
3. A method is described for direct intracranial inoculation of each animal without having to resort to trephination.
4. The inverse relationship between increased body temperature and susceptibility to infection with *Cryptococcus neoformans* is demonstrated in this study and indicates the way for continued therapeutic research.

REFERENCES

1. LONGMIRE, JR., W. P., AND GOODWIN, T. C.: Generalized torula infection, case report with observations on pathogenesis. Johns Hopk. Hosp. Bull., **64**: 22-44, 1939.

2. CRONE, J. T., DEGROAT, A. F., AND WAHLEN, J. G.: Torula infection. *Amer. J. Path.*, **13**: 863-879, 1937.
3. RAPPAPORT, B. Z., AND KAPLAN, B.: Generalized Torula Mycosis. *Arch. Path.*, **1**: 720-741, 1926.
4. CHAMPION DE CRISPEGNEY, C. T.: Torula infection of central nervous system; C. E. Rennie Memorial Lecture. *Med. J. Aust.*, **2**: 605-615, 1944.
5. NINO, F. L.: Contributions to the study of the blastomycoses in the Argentine Republic. *Bol. Inst. Clin. quir. B. Aires*, **14**: 591-1014, 1938.
6. DEBRE, R., LAMY, M., LEBLOIS, C., NICH, J., GRUMBACH, M., AND NORWARD, E.: Sur la torulose, etude clinique et experimentale (Apropos d'un cas observe chez un enfant atteint de lympho-granulomatose maligne). *Ann. Paed.*, **168**: 1-33, 1947.
7. McGEHEE, J. L., AND MICHELSON, I. D.: Torula infection in man. *Surg. Gynec. Obstet.*, **52**: 803-808, 1926.
8. KESSEL, J. F., AND HOLTZWART, F.: Experimental studies with Torula from a knee infection in man. *Amer. J. trop. Med.*, **15**: 467-483, 1935.
9. FITCHETT, M. S., AND WEIDMAN, F. D.: Generalized Torulosis associated with Hodgkins's disease. *Arch. Path.*, **18**: 225-244, 1934.
10. LEVIN, E. A.: Torula infection of central nervous system. *Arch. intern. Med.*, **59**: 667-684 1937.
11. SHAPIRO, L. L., AND NEAL, J. B.: Torula meningitis. *Arch. Neurol. Psychiat.*, **13**: 174-190 1925.
12. WEIDMAN, F. D., AND RATCLIFFE, H. L.: Extensive generalized torulosis in a cheetah or hunting leopard (*Cynaelurus jubatus*). *Arch. Path.*, **18**: 362-369, 1934.
13. SKINNER, C. E., EMMONS, C. W., AND TSUCHIYA, H. M.: Henrichi's molds, yeasts, and actinomycetes, Ed. 2, pp. 309-310, Chapman & Hall, Ltd., London, 1947.
14. WAGNER, J. A., AND SMITH, G. W.: Unpublished experiments, 1949.
15. MOSBERG, JR., W. H., AND ARNOLD, J. G.: Torulosis of the central nervous system: Review of literature and report of five cases. *Ann. intern. Med.*, **32**: 1153-1183, 1950.
16. KUHN, L. R.: Growth and viability of *Cryptococcus Hominis* at mouse body temperatures. *Proceedings of the Society for Experimental Biology and Medicine*. **41**: 573-574, 1939.
17. KUHN, L. R.: Effect of elevated body temperatures on *Cryptococcosis* in mice. *Proceedings of the Society for Experimental Biology and Medicine*. **71**: 341-343, July 1949.

DEPARTMENT
OF
OBSTETRICS

UNIVERSITY OF MARYLAND
SCHOOL OF MEDICINE

*Summary of Admissions
and
Perinatal Mortality*

July 1, 1951 through June 30 1952

I. SUMMARY

	WHITE WARD	NEGRO	PRIVATE	TOTAL
1. Number of patients discharged	485	1309	1182	2976
2. Number of patients delivered and discharged (twins—30 sets)	447	1226	1041	2714
A. Patients delivered of viable infants	435	1187	979	2601
B. Patients aborting	12	39	62	113
3. Maternal mortality	0	3	1	4
A. Rate per 1000 live births	0.00	2.56	0.85	1.49
4. Number of viable babies born	442	1200	988	2630
a. Term	387	1008	905	2300
b. Premature*	49	164	75	288
c. Immature†	6	28	8	42
A. Number born alive	433	1171	972	2576
a. Term	383	998	899	2280
b. Premature	45	151	69	265
c. Immature	5	22	4	31
B. Number stillborn	9	29	16	54
a. Term	4	10	6	20
b. Premature	4	13	6	23
c. Immature	1	6	4	11
d. Rate per 1000 live births	20.8	24.8	16.5	20.9
5. Number of neonatal deaths	13	45	15	73
a. Term	4	5	4	13
b. Premature	5	20	7	32
c. Immature	4	20	4	28
d. Rate per 1000 live births	30.0	42.6	15.4	28.3
6. Total perinatal mortality	22	74	31	127
a. Rate per 1000 live births	50.8	63.4	31.9	49.4
7. Rate deducting immature deliveries	39.2	49.4	23.6	34.2

* A premature baby is one which weighs between 1000 grams and 2499 grams.

† An immature baby is one which weighs between 400 grams and 999 grams.

II. TOTAL DELIVERIES BY NUMBER OF PRENATAL EXAMINATIONS

NUMBER OF EXAMINATIONS	WHITE WARD	NEGRO	PRIVATE	TOTAL	FETAL LOSS	
					No.	Percent
0	79	147	3	229	31	13.5
1-3	30	66	24	120	19	15.8
4-7	90	224	88	402	30	7.5
8 or more	217	716	839	1772	36	2.0
Elsewhere	17	23	18	58	3	5.2
Unknown	9	24	16	49	8	16.3
Total	442	1200	988	2630	127	4.84

III. TOTAL DELIVERIES BY PRESENTATION

PRESENTATION	WHITE WARD	NEGRO	PRIVATE	TOTAL	FETAL LOSS	
					No.	Percent
Vertex.....	421	1126	931	2478	89	3.6
Breech.....	13	46	41	100	29	29.0
Face.....	2	8	2	12	1	8.3
Brow.....	0	1	3	4	0	0.0
Compound.....	0	4	5	9	5	55.6
Transverse.....	2	7	6	15	3	20.0
Unknown.....	4	8	0	12	0	0.0
Total.....	442	1200	988	2630	127	4.84
Twins and Other Multiple Births.....	14	26	19	59	11	18.7

IV. TOTAL NUMBER OF DELIVERIES WITH HEMORRHAGE

Antepartum Hemorrhage

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% OF DELS.	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	Percent
Placenta Previa.....	3	0.7	5	0.4	3	0.3	11	0.4	4	36.4
Abruptio Placenta.....	10	2.3	25	2.1	17	1.8	52	2.0	19	36.5
Marginal Sinus.....	5	1.1	6	0.5	2	0.2	13	0.5	3	23.1
Ruptured Uterus.....	0	0.0	0	0.0	0	0.0	0	0.0	0	00.0
Other Causes.....	3	0.7	22	1.8	13	1.3	38	1.4	5	13.3
Total A.P. Hemorrhage.....	21	4.8	58	4.8	35	3.6	114	4.3	31	27.2
No A.P. Hemorrhage.....	421	95.2	142	95.2	953	96.4	2516	95.7	96	3.8
Total deliveries.....	442	100.0	1200	100.0	988	100.0	2630	100.0	127	4.84

* Postpartum Hemorrhage

Total P.P. Hemorrhage.....	31	7.0	53	4.4	30	3.1	114	4.5		
No P.P. Hemorrhage.....	411	93.0	1147	95.6	958	96.9	2516	95.5		
Total deliveries.....	442	100.0	1200	100.0	988	100.0	2630	100.0		

* Postpartum Hemorrhage is defined as blood loss of 500 cc. or more.

V. TOTAL OPERATIONS FOR DELIVERY

A. Forceps and Cesarean Section

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	Percent
Low forceps, elective.....	242	54.8	610	50.8	720	74.1	1572	59.8	26	1.7
* Low forceps, indicated....	21	4.8	92	7.7	56	5.8	169	6.4	5	2.9
Mid forceps, elective.....	5	1.1	19	1.6	20	2.1	44	1.7	1	2.3
* Mid forceps, indicated....	0	0.0	10	0.8	7	0.7	17	0.6	0	0.0
Total forceps.....	268	60.7	731	60.7	803	83.7	1802	68.5	32	1.78
Cesarean sections.....	23	5.2	74	6.16	32	3.3	129	4.9	14	10.8
Spont. deliveries.....	140	31.7	353	29.4	115	11.8	608	23.1	53	8.8

* Indicated forceps refer to delivery after 2 hours of second stage labor

B. Episiotomy

	WHITE WARD	NEGRO	PRIVATE	TOTAL
Median.....	258	735	808	1801
3rd degree laceration.....	6	50	28	84
Per cent.....	2.3	6.8	3.5	4.7
4th degree laceration.....	5	16	18	39
Per cent.....	1.9	2.2	2.2	2.2
Mediolateral.....	2	6	32	40
3rd degree laceration.....	0	0	0	0
Per cent.....	0.0	0.0	0.0	0.0
4th degree laceration.....	0	0	0	0
Per cent.....	0.0	0.0	0.0	0.0
Total episiotomies.....	260	741	840	1841

C. Other Operations

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	Percent
Breech, spontaneous	2	0.5	11	0.9	1	0.1	14	0.5	13	93.0
Breech, extraction	7	1.6	26	2.2	34	3.5	67	2.5	14	20.9
Breech, decomposition	2	0.5	0	0.0	1	0.1	3	0.1	0	0.0
Breech, forceps to head	4	0.9	13	1.1	22	2.3	39	1.5	2	5.1
Cleidotomy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Conversion	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Craniotomy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other destructive operations	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Duhrssen's incisions	0	0.0	2	0.2	1	0.1	3	0.1	2	66.7
External version	0	0.0	1	0.1	9	0.9	10	0.4	0	0.0
Induction of labor by rupture of membranes	4	0.9	4	0.3	4	0.4	12	0.5	1	8.3
Pitocin ® induction of labor	8	1.8	29	2.4	29	3.0	66	2.5	4	6.1
Induction of labor-other	3	0.7	16	1.3	8	0.8	27	1.1	0	0.0
Pit. stimulation in labor	3	0.7	12	1.0	12	1.2	27	1.1	0	0.0
Manual removal of placenta	19	4.3	20	1.7	38	3.9	77	2.9	—	—
Repair of cervical laceration	16	3.6	67	5.6	33	3.4	116	4.4	—	—
Repair of vaginal laceration	7	1.6	28	2.3	21	2.2	56	2.1	—	—
Prolapse of cord	3	0.7	6	0.5	2	0.2	11	0.4	4	36.4
Version and extraction (single pregnancy)	0	0.0	3	0.3	2	0.2	5	0.2	1	20.0
Version and extraction (multiple pregnancy)	0	0.0	1	0.1	0	0.0	1	0.0	0	0.0
Willelt forceps	2	0.5	0	0.0	1	0.1	3	0.1	0	0.0
Single transfusion	18	4.1	39	3.2	26	2.7	83	3.1	—	—
Multiple transfusions	8	1.8	23	1.9	7	0.7	38	1.4	—	—

D. Vertex Rotations

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	Percent
Occiput Transverse	25	5.7	72	6.0	92	9.5	189	7.2	8	4.2
As such	1	0.2	8	0.7	6	0.6	15	0.6	3	20.0
Spon. rotation	5	1.1	23	1.9	23	2.4	51	1.9	2	3.9
Forceps rotation	14	3.2	36	3.0	46	4.6	96	3.7	3	3.1
Manual rotation	5	1.2	5	0.4	17	1.9	27	1.0	0	0.0
Occiput Posterior	39	8.8	88	7.3	74	7.6	201	7.6	9	4.5
As such	10	2.2	29	2.4	14	1.5	53	2.0	5	9.4
Spon. rotation	5	1.1	6	0.5	7	0.7	18	0.7	0	0.0
Forceps rotation	16	3.7	42	3.5	42	4.3	100	3.8	3	3.0
Manual rotation	8	1.8	11	0.9	11	1.1	30	1.1	1	3.3

VI. TOTAL NUMBER OF DELIVERIES ACCORDING TO PUERPERAL MORBIDITY

PUERPERAL MORBIDITY	WHITE WARD		NEGRO		PRIVATE		TOTAL	
	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.
One day fever.....	21	4.7	61	5.1	41	4.1	123	4.7
Puerperal infection.....	11	2.5	74	6.2	23	2.3	108	4.1
Febrile, other causes.....	13	2.9	65	5.4	26	2.6	104	4.1
Afebrile.....	397	89.9	1000	83.3	898	91.0	2295	87.1
Total.....	442	100.0	1200	100.0	988	100.0	2630	100.0

VII. TOTAL NUMBER OF LIVE BIRTHS ACCORDING TO WEIGHT AND CONDITION AT DISCHARGE

BIRTH WT. GRAMS	TOTAL			WHITE WARD			NEGRO			PRIVATE		
	Total Live Births	Died	% Deaths	Total Live Births	Died	% Deaths	Total Live Births	Died	% Deaths	Total Live Births	Died	% Deaths
400-999.....	31	28	90.4	5	4	80.0	22	20	91.0	4	4	100.0
1000-1499.....	28	16	57.2	7	4	57.2	15	10	66.7	6	2	33.3
1500-1999.....	51	11	21.6	7	1	14.3	31	6	19.3	13	4	30.8
2000-2499.....	186	5	2.7	31	0	00.0	105	4	3.8	50	1	2.5
2500 and over.....	2280	13	0.6	383	4	1.0	998	5	5.0	899	4	0.4
Total.....	2576	73	2.7	433	13	3.0	1171	45	3.8	972	15	1.5

VIII. TOTAL NUMBER OF STILLBIRTHS ACCORDING TO WEIGHT

BIRTH WT. GRAMS	TOTAL			WHITE WARD			NEGRO			PRIVATE		
	Total Births	Still-Births	% Still-Births	Total Births	Still-Births	% Still-Births	Total Births	Still-Births	% Still-Births	Total Births	Still-Births	% Still-Births
400-999.....	42	11	26.2	6	1	16.6	28	6	21.4	8	4	50.0
1000-1499.....	36	8	22.2	8	1	12.5	20	5	25.0	8	2	25.0
1500-1999.....	57	6	10.5	9	2	22.2	35	4	11.4	13	0	00.0
2000-2499.....	195	9	4.6	32	1	3.1	109	4	3.7	54	4	7.4
2500 and over.....	2300	20	0.9	387	4	1.0	1008	10	1.0	905	6	0.7
Total.....	2630	54	2.0	442	9	2.0	1200	29	2.4	988	16	1.6

IX. TOTAL NUMBER OF STILLBIRTHS AND NEONATAL DEATHS ACCORDING TO WEIGHT

WEIGHT GRS.	TOTAL			WHITE WARD			NEGRO			PRIVATE		
	Total Births	Still-births and Neonatal Deaths	%	Total Births	Still-births and Neonatal Deaths	%	Total Births	Stillbirths and Neonatal Deaths	%	Total Births	Stillbirths and Neonatal Deaths	%
400-999....	42	39	93.0	6	5	83.4	28	26	93.0	8	8	100.0
1000-1499....	36	24	66.7	8	5	62.5	20	15	75.0	8	4	50.0
1500-1999....	57	17	29.8	9	3	33.3	35	10	28.6	13	4	30.8
2000-2499....	195	14	7.2	32	1	3.1	109	8	7.3	54	5	9.3
2500 and over	2300	33	1.4	387	8	2.0	1008	15	1.5	905	10	1.1
Total.....	2630	127	4.84	442	22	5.0	1200	74	6.16	988	31	3.1

X. ETIOLOGY OF PERINATAL MORTALITY

	PREMATURE				FULL TERM			
	W.W.	Negro	Private	Total	W.W.	Negro	Private	Total
Hemorrhage Intracranial.....	0	0	0	0	1	2	0	3
Disproportion Cephalopelvic.....	0	0	0	0	0	1	0	1
Delivery Breech.....	0	0	0	0	1	1	0	2
Anoxemia.....	11	30	8	49	6	9	5	20
Placenta-Premature Separation of.....	3	15	3	21	1	2	2	5
Placenta-Previa.....	2	2	0	4	0	0	0	0
Toxemia.....	2	10	3	15	0	1	1	2
Cord-Umbilical Compression Of.....	0	0	0	0	1	2	0	3
Complications-Medical.....	0	3	2	5	2	0	0	2
Undetermined.....	4	0	0	4	2	4	2	8
Development-Anomalies Of.....	0	3	1	4	0	4	4	8
Infections.....	0	1	2	3	1	0	1	2
Pneumonia.....	0	0	2	2	0	0	1	1
Septicemia.....	0	1	0	1	1	0	0	1
Prematurity.....	3	25	10	38	0	0	0	0

XI. CAUSES OF PREMATURITY AND IMMATURITY

	WHITE WARD	NEGRO	PRIVATE	TOTAL	FETAL LOSS	
					No.	%
Induced Labor.....	5	12	0	17	5	29.4
Toxemia.....	5	10	0	15	3	20.0
Preeclampsia.....	1	9	0	10	2	20.0
Posteclampsia.....	1	0	0	1	0	0.0
Hypertensive Disease.....	3	1	0	4	1	25.0
Hemorrhage.....	0	2	0	2	2	100.0
Placenta-Premature Separation Of.....	0	1	0	1	1	100.0
Other Hemorrhages.....	0	1	0	1	1	100.0
Spontaneous Labor.....	50	180	83	313	89	28.4
Toxemia.....	5	31	11	47	13	27.7
Preeclampsia.....	0	15	8	23	5	21.7
Eclampsia.....	0	0	1	1	1	100.0
Hypertensive Disease.....	5	16	2	23	7	30.4
Hemorrhage.....	9	25	11	45	21	46.7
Placenta-Previa.....	3	2	1	6	3	50.0
Placenta-Premature Separation Of.....	6	13	7	26	13	50.0
Other Hemorrhages.....	0	10	3	13	5	38.4
Membranes-Premature Rupture Of.....	7	40	13	60	7	11.6
Hydramnios.....	0	1	0	1	1	100.0
Pregnancy Multiple.....	7	14	14	35	10	28.6
Disease-Maternal-Acute Infectious.....	0	1	1	2	2	100.0
Pathology-Cervical.....	0	7	0	7	1	14.1
Fetus-Abnormalities Of.....	0	5	5	10	4	40.0
Fetus-Intrauterine Death Of.....	0	5	3	8	8	100.0
Cause Undetermined.....	22	51	25	98	22	22.5

XII. COMPLICATIONS

A. Total Number of Deliveries with Toxemia

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% of Dels.	%	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	Percent
Acute Toxemia.....	22	5.0	124	10.6	50	5.1	196	7.5	11	5.6
Pre-eclampsia.....	21	4.7	119	10.0	48	4.9	188	7.2	8	4.2
Eclampsia.....	1	0.3	5	0.6	2	0.2	8	0.3	3	37.5
Chronic Hypertension....	30	6.8	117	9.7	38	3.8	185	7.0	13	7.0
With superimposed Toxemia.....	2	0.5	21	1.7	2	0.2	25	0.9	3	12.0
Without superimposed Toxemia.....	28	6.3	96	8.0	36	3.6	160	6.1	10	6.3
Total.....	52	11.8	241	20.3	88	8.9	381	14.5	24	6.3

B. Total Number of Deliveries—Rh Negative

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	Percent
Rh Neg.—sensitized.....	4	0.9	9	0.7	8	0.8	21	0.8	3	14.3
Rh Neg.—not sensitized.....	53	12.0	64	5.4	156	15.8	273	10.4	8	2.9
Rh Neg.—sensitization unknown..	1	0.2	0	0.0	1	0.1	2	0.1	0	0.0
Other isoimmunization.....	0	0.0	0	0.0	1	0.1	1	0.0	0	0.0
Total.....	58	13.1	73	6.1	166	16.8	297	11.3	11	3.7

C. Total Number of Deliveries with Medical Complications

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	% of Dels.	No.	Per cent
Heart Disease.....	6	1.3	28	2.3	10	1.0	44	1.7	6	13.6
No Failure.....	5	1.0	24	2.0	9	0.9	38	1.4	4	10.5
Questionable Failure.....	0	0.0	1	0.1	0	0.0	1	0.0	0	0.0
Failure.....	1	0.2	3	0.2	1	0.1	5	0.3	2	40.0
Tuberculosis.....	3	0.7	18	1.5	13	1.3	34	1.3	1	2.9
Pulmonary, active.....	0	0.0	2	0.2	2	0.2	4	0.2	0	0.0
Pulmonary, inactive.....	3	0.7	16	1.3	11	1.1	30	1.1	1	3.3
Elsewhere.....	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Diabetes.....	4	0.9	6	0.5	7	0.7	17	0.6	2	11.8
Sickle Cell Anemia.....	0	0.0	6	0.5	0	0.0	6	0.2	0	0.0

D. Total Number of Deliveries with Syphilis

WHITE WARD		NEGRO		PRIVATE		TOTAL	
Number	% of Dels.	Number	% of Dels.	Number	% of Dels.	Number	% of Dels.
6	1.3	84	7.0	2	0.2	92	3.5

E. Prolonged Labor
(Over 25 Hours)

	NUMBER	% OF DELS.	FETAL LOSS	
			No.	Per cent
Pitocin ® Stimulation.....	9	0.3	0	0.0
Spontaneous Delivery.....	10	0.3	2	20.0
Elective Forceps.....	36	1.4	1	2.78
Indicated Forceps.....	26	1.0	1	3.85
Cesarean Section.....	6	0.2	1	16.6
Breech.....	3	0.1	0	0.0
Total.....	90	3.3	5	5.5

F. Total Number of Deliveries by Pelvis

TYPE OF PELVIS	CASES			BY X-RAY			FETAL LOSS		FETAL LOSS (X-RAY)	
	W.W.	Negro	Private	W.W.	Negro	Private	No.	%	No.	%
Normal.....	372	917	945	45	278	128	89	4.0	6	1.3
Contracted Inlet.....	5	73	8	2	50	4	5	5.8	3	5.4
Midplane Cont.....	3	49	8	1	36	8	2	3.3	1	2.2
Outlet Cont.....	5	16	10	3	11	7	0	0.0	0	0.0
Inlet and Outlet.....	0	10	0	0	7	0	0	0.0	0	0.0
Inlet and Midplane.....	1	6	0	0	5	0	0	0.0	0	0.0
Mid and Outlet.....	1	11	6	0	8	5	1	5.6	1	7.7
Inlet, Midplane & O.....	1	8	0	0	6	0	0	0.0	0	0.0
Asymmetrical.....	0	1	0	0	0	0	0	0.0	0	0.0
Unknown.....	54	109	11	1	3	0	30	17.2	1	25.0
Total.....	442	1200	988	52	404	152	127	4.84	12	1.98

XIII. CESAREAN SECTIONS

TYPE OF OPERATION	WHITE WARD	NEGRO	PRIVATE	FETAL LOSS	
				No.	%
Low Cervical.....	15	52	19	9	10.5
Classical.....	0	1	2	2	66.7
Classical and Tubal Sterilization.....	0	1	1	1	50.0
Low Cervical and Tubal Sterilization.....	6	12	10	0	00.0
Classical and Hysterectomy.....	1	1	0	2	100.0
Extraperitoneal.....	0	7	0	0	00.0
Total.....	22	74	32	14	10.9

Indications for Cesarean Sections

1. Pelvic Contractions and Mechanical Dystocia					
A. Contracted Pelvis.....	4	24	3	2	6.5
B. Uterine Inertia.....	4	12	1	1	5.9
C. Malpresentation.....	1	1	6	0	0.0
D. Large Fetus—Normal Pelvis.....	1	4	2	0	0.0
Total.....	10	41	12	3	4.8
2. Previous Cesarean Section.....	5	17	9	1	3.2
Total.....	5	17	9	1	3.2
3. Hemorrhagic Complications.....					
A. Abruptio Placentae.....	1	1	1	2	66.7
B. Placenta Previa.....	3	3	2	2	25.0
Total.....	4	* 4	3	4	36.4
4. Toxemias					
A. Pre-Eclampsia.....	1	8	3	5	41.6
Total.....	1	8	3	5	41.6
5. Intercurrent Disease					
A. Diabetes Mellitus.....	0	1	3	0	0.0
6. Miscellaneous					
A. Elderly Primigravida.....	0	0	1	0	0.0
B. Prolapse of Cord.....	1	1	0	0	0.0
C. Bad Obstetrical History.....	1	1	0	0	0.0
D. Other.....	0	1	1	0	0.0
Total.....	2	3	2	0	0.0

XIV. THERAPEUTIC ABORTIONS

	WHITE WARD	NEGRO	PRIVATE	TOTAL
Type of operation				
A. Hysterotomy and Tubal Sterilization.....	0	1	0	1
Total.....	0	1	0	1
Indications For Therapeutic Abortion				
Heart Disease.....	0	1	0	1

XV. STERILIZATIONS

Type of Operation				
A. Tubal, puerperium.....	8	25	5	38
B. Tubal, not pregnant.....	0	4	0	4
C. Accompanying cesarean section—tubal ligation.....	6	13	11	30
D. Accompanying therapeutic abortion—hysterotomy and tubal ligation.....	0	1	0	1
E. Accompanying cesarean section—hysterectomy.....	1	0	0	1
F. Hysterectomy, not pregnant.....	2	4	0	6
Total.....	17	47	16	80
Indications For Sterilization				
Diabetes.....	0	0	2	2
Previous Section.....	7	15	7	29
Hypertensive Disease.....	1	10	0	11
Multiparity.....	8	10	2	20
Heart Disease.....	0	9	3	12
Other.....	1	3	2	6
Total.....	17	47	16	80

XVI. MATERNAL DEATHS

Total Live Births	2576
Total Maternal Deaths	4
Total Maternal Death Rate	1.49 per 1000 live births

Registered Births	2298
Maternal Deaths in Registered Patients	1
Maternal Death Rate in Registered Patients	0.45 per 1000 live births

Maternal Deaths in Non-registered Patients	3
Maternal Death Rate in Non-registered Patients	10.7 per 1000 live births

M. B. 65302, a 27 year old white, para 2-0-0-2, admitted 7-18-51 because of albuminuria. She was treated conservatively for albuminuria and on 8-8-51 her blood sugar was 630 mgm/%. Her medical consultant, who had been seeing her, could not control the blood sugar with 1050 u. of insulin during a 24 hour period. Between Aug. 10th and 17th she received daily 4800 units of insulin without appreciable effect in the blood sugar status. She was induced by rupture of membranes and delivered spontaneously without difficulty. The child was normal and was discharged alive. Following delivery the insulin requirements dropped, so that within 48 hours she did not need any. She was thought to have an atypical Sheehan's disease and was discharged 8-28-51 to return later for further work-up. Readmitted 10-9-51. Her further hospital course was characterized by bouts of fever, with pneumococcus type III in the blood culture. She did not improve over a period of weeks and died Dec. 19, 1951.

AUTOPSY: Acute bacterial endocarditis.

L. B. 65445, a 23 year old, colored, unregistered, parity unknown, was admitted 7-20-51 in a semi-comatose condition from another hospital, one week postpartum. She had been in mild shock and comatose since delivery. Clinically, she appeared to have a cerebral vascular accident of the thrombotic type. She deteriorated progressively and died 8-4-51.

AUTOPSY: Thrombosis of the superior sagittal sinus, sickle cell anemia.

H. S. 69210, a 21 year old, colored, registered, para 3-0-1-1 admitted 12-31-51 in early labor. Labor slow with intrapartum fever. At the time of delivery moderate gaseous material exuded. Stillborn baby delivered without too much difficulty. Diagnosis of gas bacillus infection. Treated with antitoxin and chloromycetin. Developed diarrhea and picture of lower nephron nephrosis. Deteriorated gradually and died 1-12-52.

NO AUTOPSY

DIAGNOSIS: Welch bacillus infection.

E. M. 71626, a 25 year old colored, unregistered, para 3-0-1-3 admitted 4-20-52, two days following delivery of a premature baby at home. She had been ill for about 6 months with progressive weakness and loss of appetite. On admission she was moribund and died 1 hour and 45 minutes after admission to the hospital.

AUTOPSY Pulmonary tuberculous, pneumonia with cavitation.

CLINICO-PATHOLOGIC CONFERENCE

FROM THE CASE HISTORIES, UNIVERSITY HOSPITAL, BALTIMORE, MD.

Clinical History

On December 7, 1950, a 32 year old white female was admitted to the hospital complaining of diarrhea and sanguine, purulent stools. Four years before, she had suffered a severe upper respiratory infection which was followed by diarrhea. Remittent episodes of malena, (12 stools per day), and abdominal cramps had occurred until admission. At this time the symptoms had become more severe and refractory. She had had migratory arthritis recently and intermittently during childhood.

The childhood and adolescence of this patient was fraught with psychologic disturbances. At the age of 3 she reluctantly lived with a grandmother. Considered a "weakling," she longed for her mother during this time and felt keen disappointment when her yearning was not gratified. Married at 16 years, she had 2 children who are now 10 and 9 years of age. The patient was occupied in her own home caring for her children and her husband who adequately provided for the family. Since the husband returned from "service" with the Army, he had been employed during the "swing shift." The patient's illness began when the husband returned home. She slept poorly while the husband was at work and when he worked overtime, her symptoms were exaggerated. Furthermore, the husband's sleeping during the day prevented her establishing a routine for the children and the housework.

At the first admission a blood hemoglobin determination was recorded as 87 per cent (12.6 grams) and a blood leucocyte count, as 9,250. The differential count was normal. Roentgenographs were made (Fig. 1). The recto-sigmoid intestinal segments were examined December 12, 1950. The mucosa was red, edematous and easily traumatized. There was no acute ulceration. Mucopurulent exudate existed in the lumen. The administration of ACTH (Corticotropin) led to subjective and objective improvement. After discharge from the hospital, the patient was directed to observe a special diet and take belladonna, Nembutal®, Becotin® and Metamucil®.

The patient was readmitted early in April, 1951. She had gained weight and had only a few diarrheal stools containing blood and mucus. Six weeks prior to admission she had increasingly frequent stools and severe cramp-like lower abdominal pain. She was apprehensive and easily aroused to tears. At this time her hemoglobin was 59 per cent (8.6 grams) and leucocyte count, 11,950. The patient was not helped this time by ACTH and antibiotics. On April 18 a total colectomy was done. She had a stormy postoperative course. Her blood potassium and chloride ion concentrations were controlled with great difficulty. The ileostomy drained profusely at first but later subsided. Abscesses developed at injection sites and suppurative phlebitis, in the right leg. After controlling these pyogenic complications, she was discharged 35 days after the operation.

The patient was admitted for the third time on September 25, 1951. Following her discharge, she had gained weight rather steadily and did well until 2 weeks before admission, at which time she began to have tenesmus and lower abdominal pains,

associated with bloody mucoid discharge per rectum. She also developed external hemorrhoids. On this admission her temperature was 100°F. and a physical examination revealed pneumonitis in the left base. This was confirmed by roentgen-ray examination and treated with Chloromycetin®. This drug and ACTH did not improve the lower rectal complaints. On the ninth of October she was subjected to a



FIG. 1. Barium enema—post evacuation film

Miles resection with a revision of her ileostomy because a fistulous tract had developed near the stoma. The patient was discharged on the fifteenth postoperative day.

Clinical Discussion

Dr. T. R. Adams: If you believe in the view expounded by certain medical people and the psychiatrists, you have a perfect setup for some condition that will respond

to psychiatric therapy. She has all of the necessary symptoms to go along with almost any condition that could be affected by a mental upset.

Dr. W. L. Kilby: We have just one set of roentgenographs, and these were done at the first admission. One film was made on December 11, 1950, the fifth day of hospitalization. Changes are mainly in the rectum and sigmoid. The distal half of the rectum is markedly narrowed. Normally it should be a semi-lunar type of structure, but is cone shaped. The protocol states that the rectal examination was negative. I am surprised that the patient did not have pain on rectal examination. You will notice that the periphery of the opaque medium is sawtoothed. This irregularity may be the result of ulcers or cobblestone mucosa caused by piling up of granulation tissue. The process, I am sure, extends much farther than we have demonstrated by this film. The process may extend to the cecum and not betray itself in a roentgenograph of the colon. This is especially true in an early stage, when edema, hemorrhage, and possibly minute abscesses exist, but not fibrosis. In this roentgenograph one notices that the colon has its normal redundancy. It has not been diminished in a calibre except in the rectal area. After evacuation, the mucosal pattern is somewhat coarse and granular in the descending portion. This certainly does not represent the final stage of the disease.

Dr. Adams: I feel sure that most of you know the diagnosis after reading this history. The diagnosis, I believe, is ulcerative colitis. Ulcerative colitis, in the light of our present knowledge, is a chronic recurrent inflammatory process of unknown etiology. It involves the mucosa and submucosa of the colon and rectum. It leads to ulceration, infection, perforation and necrosis of the bowel wall, and to subsequent fibrosis of the colon. The manifestations of the disease are extremely variable. The condition that we have presented, so far, is that of early ulcerative colitis. In the beginning, this disease is, as a rule, afebrile and non-toxic. The main complaint is diarrheal stools containing pus, mucus and at times, blood. In the proctoscopic examination an edematous swollen mucous membrane is described. No actual ulcers were seen, although on the roentgenologic examination there was evidence of ulceration.

In a normal rectum, on proctoscopic examination one can see prominent vessels beneath the mucosa. In ulcerative colitis, there is so much swelling and edema that these vessels are not seen. There is usually spasm of the bowel, and as the disease progresses, one can see evidence of hemorrhage beneath the mucous membrane. Ulceration follows, infection and fever is established; more blood in the stools, more abdominal cramps and toxemia appear. The treatment that this patient received during the first hospitalization was probably bland diet, psychotherapy, antispasmodics, belladonna, Nembutal®, vitamins and Metamucil®. Recently, ACTH has been used. At the moment, it is being condemned by a number of writers, but apparently this patient responded nicely to the use of ACTH. It is not unusual to see a patient in the early stage of this sickness respond to the general measures without ACTH and antibiotics. Occasionally they will respond to a point where the bowel returns almost to normal. What effect ACTH has is not really known. Lahey reports that they had treated 28 patients during acute exacerbations of ulcerative colitis with ACTH, 21 of them responding sufficiently so as to be discharged from the hospital. The other 8 required additional treatment. Of the twenty-one that did respond,

in a four month period 8 of them had suffered relapses. In today's case the patient did respond and was discharged from the hospital. Before the second admission, ulceration and secondary infection occurred. She was unsuccessfully treated with ACTH. An ileostomy and resection of her diseased colon was performed. Before the operative procedure, she was given supportive therapy in the form of transfusions and multiple vitamins.

An ileostomy is a formidable procedure in any patient; if the patient is "toxic," the danger of complications and death may be increased to 50 per cent. Mulholland reports that in apparently 20 per cent of the cases, as much as 40 cm. of ileum may be involved. The disease process should be searched for in the terminal ileum. The ileostomy then should be done proximal to the diseased portion. The statement that a fistulous tract had developed near her stoma suggests ileal involvement and failure to resect proximal to the disease process.

The treatment of ulcerative colitis is varied. ACTH in the beginning apparently was going to give remarkable results, but at the present time there is appearing in literature a number of articles stating that while it encourages a sense of well being, decreases toxemia, and induces a remission so far as symptoms are concerned, the disease process is still active in the colon. An increasing number of cases are being reported in which perforation of the colon takes place. This may be partially caused by ACTH. Wound healing is delayed or interfered with in the presence of ACTH. This probably accounts for the increased number of perforations that occur. Psychotherapy does not seem to be appropriate to the patients that I see with ulcerative colitis. In my practice, the patients seen may display extensive ulceration, bleeding and anemia, fibrosis and obstruction, polyarthritis, fistulous tracts or perforation. This advanced and complicated state would preclude any but an immediate palliative, corrective or extirpative treatment. In my opinion, ileostomy should be performed, and if the illness is not assuaged, a judicious colectomy or Miles operation should be done.

Senior Student: Do you think allergy is a probable cause of this condition?

Dr. Adams: I think any patient with any bowel complaint will mention a food that disagrees with him. Most people discard this theory as not worthwhile.

Senior Student: Do you think this patient might have had rheumatic heart disease?

Dr. Adams: I think the pains she had in childhood were probably caused by rheumatic fever.

Senior Student: Is there any association between the upper respiratory infection and the colitis?

Dr. Adams: I think that you cannot rule this out, because in so many of the cases, the ulcerative colitis is ushered in with an acute respiratory infection.

Senior Student: This case is too obvious. I wonder if there is anything else you could consider in a differential diagnosis, such as, amoebic dysentery. Were stool examinations done on this patient?

Dr. Adams: Cultures and stool examinations were done at the time of proctoscopy.

Senior Student: Could lymphogranuloma venereum (lymphopathia venereum—Ed) cause this condition?

Dr. Adams: Lymphogranuloma venereum causes fibrosis in the mucous membrane but involves only the lower 6 to 8 cm. of the rectum. Roentgenographs show that the entire rectum is involved in this case. The patients with lymphogranuloma venereum do not have the fever and the diarrhoea that patients with ulcerative colitis have.

Senior Student: Do you think this patient would have been a good candidate for psychotherapy after the first admission?

Dr. Adams: Yes—She had been subjected to psychic trauma.

Dr. H. R. Spencer: What is the general outcome in these cases?

Dr. Adams: If a resection is proximal to the disease process, I would expect the patient to gain weight, get back to normal, and carry on his usual occupation.

Pathologic Discussion

Dr. Hugh R. Spencer: This patient was operated upon first on April 18, 1952 at which time the distal portion of the ileum and the major portion of the large bowel were removed. An ileostomy was performed. A second operation was carried out on October 9, 1951, at which time the remainder of the sigmoid colon and the rectum were removed.

The gross specimens, considered collectively, showed changes in all portions of the bowel. The gross appearance was everywhere similar, but the alterations were most marked in the colon. The mucosa was quite hyperemic and covered by mucus. There were many small and large superficial ulcers. The mucosal surface in many areas presented a granular, polypoid appearance. There were, however, areas in the colon that showed relatively little involvement.

Microscopic sections showed an inflammatory reaction which was most marked in the submucosa, although all coats were involved to a degree. The tissue was infiltrated by lymphocytes and scattered leukocytes. There was also a moderate fibroblastic and capillary proliferation. Hyperplastic lymphoid follicles were seen in the submucosa. There were areas of ulceration which involved the mucous and submucous coats. The mucosa was hyperplastic and edematous. It presented a polypoid appearance.

Anatomic Diagnosis

“Ulcerative colitis” involving the terminal ileum, colon, sigmoid and rectum.

OBSTETRICAL CASE REPORT*

This patient was a 19-year old primigravida whose estimated date of confinement was July 30. There had been no prenatal care, the patient first coming under observation in the emergency room of the hospital on June 21. Her pregnancy had been uneventful until 4 hours prior to admission at which time she noted a gush of clear fluid from the vagina. About 2 hours later she began to have regular, cramp-like, abdominal pain.

On admission, she was found to have an ROA, fetal heart 140 in the right lower quadrant of the abdomen. The estimated weight of the fetus was 1900 grams. Rectal examination found the cervix 70 per cent effaced, 3 centimeters dilated, with the presenting part at the ischial spines. The nitrazene paper test was positive for rupture of the membranes. Following admission there was noticeable increase in the frequency and severity of the uterine contractions so that one hour later they were occurring every 4 minutes and lasting 50 seconds. At this time the cervix was 5 centimeters dilated and because she complained considerably with each contraction, she received 100 mgm. of demerol and 1/150 grain of scopolamine intramuscularly. Progress thereafter was rapid and 45 minutes later the cervix was fully dilated with the head on the perineum. She was taken to the delivery room where, under nitrous oxide-oxygen-ether anesthesia, she was delivered by outlet forceps after a midline episiotomy of a living male child weighing 1721 grams.

At birth the baby was flaccid, pale, and required several minutes of artificial respiration with oxygen before irregular respirations could be established. He was placed in oxygen and heat but respirations gradually became more labored with retraction of the soft tissues about the thorax. The baby lived 10 hours. At autopsy the significant finding was extensive atelectasis.

A reduction in fetal mortality requires the cooperation of obstetricians, pediatricians, public health officers, the nursing profession and others. Premature labor is one of the commonest associated factors with fetal wastage. Its frequency may be reduced by adequate prenatal care. This includes screening the patient for undiagnosed disease such as syphilis and diabetes; correct instruction in the hygiene of pregnancy with emphasis on diet which should be high in protein, adequate in vitamins and minerals with sufficient calories for a moderate weight gain; and careful, frequent observations for the development of acute abnormalities. **At the University Hospital the fetal mortality is 6 times as high in the unregistered as in the registered patients** and a portion of this difference is due to the higher frequency of premature delivery in the former group.

In spite of all precautions, many premature labors will still occur, for the etiology of the majority of such labors is obscure. Frequently the labor is precipitated by spontaneous rupture of the membranes. In the case cited, where pregnancy had progressed to 35 weeks, labor followed rupture in a matter of hours. Usually at this stage of pregnancy, the interval is longer and if contractions do not develop, labor should not be induced, for the pregnancy may be prolonged for days and thus add

* From the Department of Obstetrics, University of Maryland School of Medicine.

considerably to the maturity of the fetus. The use of antibiotics will reduce the hazard of intrauterine infection.

When labor does develop the fact that the premature is much more susceptible to all fetal hazards must be remembered. A minimum of analgesics should be used. In this patient the amounts given were probably too large and given too near the time of delivery. Local or conduction anesthesia should be selected. Both analgesics and general anesthetics tend to depress the fetus and thus interfere with the establishment of vital functions at birth. The delivery is best carried out using outlet forceps when the head is on the perineum. This should be preceded by episiotomy. Delayed clamping of the cord should be practiced with prematures where a relatively larger portion of fetal blood will be trapped in the placenta if the cord is cut immediately.

Having been delivered in good condition, the welfare of the premature infant now depends in large measure on careful medical supervision and meticulous nursing care.

BOOK REVIEWS

Biochemistry for Medical Students. *W. V. Thorpe, Reader in Chemical Physiology, University of Birmingham, Birmingham, England. 528 pages, illustrated. London, England; J. B. Lippincott Company, 1952. Fifth Edition.*

This fifth edition of Dr. Thorpe's book has been revised to cover the wide gap between our present state of knowledge and that summarized in the previous edition in 1947. The chapters on metabolism have been recast and largely rewritten in order to place the tricarboxylic acid cycle in proper perspective as the final metabolic pathway common to amino acids, carbohydrates, and fats. The chapter "Detoxification" has been rewritten and treated as a special aspect of metabolism under the title, "Metabolism of Foreign Organic Compounds." Much new knowledge has demanded considerable modification of the sections dealing with enzymes and oxidation-reduction.

The section on vitamins and nutrition is extensive and more complete than is found in most biochemistry texts. On the other hand, the chapter on hormones outlines only in the briefest manner the structural formulas of the hormones and their functions. It makes no mention of their metabolism or metabolic effects.

The text is not unduly clinical but does present biochemistry very well as it relates to normal body function.

Thorpe's book was written for medical students and will adequately meet their needs. Because of its lack of depth and the absence of references to the original literature, it would not be satisfactory for graduate students majoring in biochemistry.

RAYMOND E. VANDERLINDE, PH.D.

Topics in Physical Chemistry. *W. Mansfield Clark, 2nd edition, The Williams and Wilkins Co., Baltimore 2, Maryland, 1952.*

The purpose of the second as well as the first edition of this book is to meet the needs of medical students. To a degree this goal is achieved by giving a background and insight to some of the physical-chemical laws that influence bodily functions. There are several noteworthy chapters that would be of prime interest to the medical student and to other medical personnel who would review special topics in physical chemistry. These chapters are:—Density and some of its Clinical Uses (chapter 5); Diffusion (chapter 10); The Laws of Mass Action. Part II. Equilibria, Including those of Oxyhemoglobin and CO-Hemoglobin (chapter 13); Certain properties of Protein Solutions (chapter 17); and A Stepwise Treatment of the Equilibrium States of Blood Electrolytes (chapter 18).

The remaining chapters will also be of general interest to medical students, but will appeal far more to those who have a greater knowledge and background of the subjects covered. These subjects include an introduction to thermodynamics and atomic and molecular structure. The author has tried to keep the mathematics to a minimum, but in so doing he has abbreviated some of the derivations of various formulæ, thus making it difficult for some readers to understand. Another improvement suggested for the third edition is to enlarge many of the illustrations.

In spite of these few criticisms, this edition will not only constitute a good reference book for medical students, but will also be of interest and use to investigators in many different fields of study.

GERALD KESSLER, M.S.

The Physician Examines the Bible. *C. RAIMER SMITH, B.S., M.D., D.N.B., former teacher in Pathology and Clinical Laboratory Science, p. 355, Philosophical Library Inc., N. Y. 1950, price \$4.25.*

This very helpful book is the result of a prodigious amount of biblical study and investigation by a physician trained in laboratory science, who has maintained throughout his life a sincere appreciation of the Bible, and has attempted to correlate many interesting statements with modern medical science.

His hundreds of Biblical quotations are interesting to say the least. They indicate much Bible study, but to many of them various interpretations are possible. The chapter on Medical Subjects in the Old Testament is quite well done, and should serve as a guide to all who study this Testament with a desire to think back many centuries while living with the physical comforts and health advantages modern civilization enjoys.

Of course the author has attempted the impossible, i.e., to make the Bible he so easily quotes fit modern scientific pronouncements and facts. There were no scientifically proved facts existing at the time these wonderful books were written. Time has unfolded them, and has established their value, and permits their quotations as virtuous.

Many simple facts have been detailed by the author which should be of considerable help to the young student. This is information which could be easily obtained from books on biology, physiology and anatomy, but it is made more available to the lay student.

His chapter on evolution is especially well done. The extreme fundamentalists could not take offense at the very capable way he has handled this subject which has proved so controversial to many.

In his examination of the Bible, Dr. Smith has uncovered no new facts. They are old and have been there since the first chapters were written, but after a life devoted to the study of the Bible he has emphasized again that this is an old book with a modern value, and has provided another way to understand it. His book is well worth reading.

C. Reid Edwards, M.D.

Handbook of Pediatric Medical Emergencies. ADOLPH G. DESANTIS, M.D. and CHARLES VARGA, M.D. 284 pages illustrated with 51 illustrations. The C. V. Mosby Company, St. Louis, 1951, \$5.00

The authors have compiled a book which deals not only in the treatment of pediatric medical emergencies but also gives the essential diagnostic signs and symptoms of the various common as well as unusual problems in the treatment of children. The book is almost entirely in outline form for quick reference. It is organized into chapters dealing with the various systems of the body, drownings, poisonings, with one chapter on miscellaneous emergencies including bites of all kinds, burns, electric shock, epistaxis, various eye injuries, frostbite, heat exhaustion, heat and sun stroke, hemorrhage, hiccough, pediatric anesthesia, serum reactions, transfusion reactions and shock. There is one chapter dealing with the care of the premature infant which briefly discusses the natal and neonatal problems in relation to anesthesia, analgesia and delivery methods which are considered safest for the premature, immediate care of the premature after birth and the continuous care in the premature nursery. The last chapter in the book gives the essential steps in outline form with accompanying pictures of the pediatric procedures, including vein punctures, subdural taps, spinal tap, oxygen and aerosol therapy. The end of the book contains the addenda composed of more recent treatments which developed after the main text had been completed. The appendix has some very useful data on the compounds in commercial products which frequently cause poisonings. The last table in the appendix gives the normal physical and chemical constants with listings of the diseases in which the values are increased and decreased.

This book covers a wide range of pediatric conditions in a concise manner, giving the advisable dosage of each drug and the methods by which it may be given for the emergency state as well as for continuous therapy. Except for the choice of chemotherapy or use of antibiotics very little of this book will change, which helps to make it a valuable addition to the books which should be kept handy for quick reference for the general practitioner as well as the pediatrician. This book is one which should be in every accident room treating children, as well as in every pediatric treatment room. The authors have produced a well written and much needed book for quick reference.

Ruth W. Baldwin, M.D.

MEDICAL SCHOOL SECTION

PSYCHIATRIC INSTITUTE DEDICATED

Ceremonies highlighting the dedication of the new Psychiatric Unit of the School of Medicine and Hospital included a two day Symposium on numerous aspects of modern psychiatry.

The ceremonies began at 2:30 P.M. on November 17, 1952 with introductory remarks by President H. C. Byrd. Dean H. Boyd Wylie then spoke on the Psychiatric Institute and the School of Medicine. The Hon. W. Preston Lane, former Governor of Maryland and during whose administration the Psychiatric Institute project was launched, then spoke concerning the development of the Psychiatric Institute. Dr. Ralph P. Truitt, Professor of Psychiatry Emeritus of the School of Medicine, also spoke on the Psychiatric Institute for it was during Dr. Truitt's Professorship that the construction of this Unit was conceived.

Governor Theodore R. McKeldin then addressed the group. Dr. Jacob E. Fine-singer, Professor of Psychiatry at the School of Medicine, spoke on the "The Psychiatric Institute—Its Plans and Program".

In the evening Dr. Harry C. Byrd, President of the University of Maryland spoke at a subscription dinner at the Hotel Belvedere. Dr. Alan Gregg, Vice-President of the Rockefeller Foundation, of the City of New York delivered the principal address.

On Tuesday morning, November 18th, the scientific program continued with the topic "Change in Behavior". Dr. Ralph W. Gerard was Chairman of this symposium. The interesting program follows.

Following luncheon the seminar continued with the subject "Learning Theory, Language, and the Problem of Personality Disorder" discussed by Dr. O. Hobart Mowrer. This was followed by a panel discussion with Dr. Ralph W. Gerard as Chairman and including the following distinguished discussants:

John von Neumann, Ph.D.	J. H. Quastel, Ph.D.
O. Hobart Mowrer, M.D.	Holger Hyden, M.D.
Raphael Lorente de No, M.D.	Stanley Cobb, M.D.

During the evening of the same day a public lecture entitled "The Anthropologist Looks at Contemporary Behavior" by Margaret Mead, Ph.D., Associate Curator of Ethnology at the American Museum of Natural History of New York was given at the Maryland Casualty Auditorium in Baltimore.

On Wednesday morning, November 19th, under the Chairmanship of Dr. Alan Gregg, the subject of "Medical Education and Change in Behavior" was discussed. The program was as follows.

"Human Values in Medical Education". John R. Reid, Ph.D., Professor of Philosophy, Stanford University, Visiting Professor of Psychiatry, University of Maryland.

"Science and Medical Education". Philipp G. Frank, Ph.D., Professor of Education, Harvard University, Cambridge, Massachusetts.

Panel Discussion

"Methods in Medical Teaching".

George Saslow, M.D., Associate Professor of Psychiatry, Washington University School of Medicine, St. Louis, Missouri.

Thomas Hale Ham, M.D., Professor of Medicine, School of Medicine, Western Reserve University, Cleveland, Ohio.

Jacob E. Finesinger, M.D.

Luncheon

Day Room—Fourth Floor Psychiatric Institute

In the afternoon of November 19th, the subject "Psychotherapy and Changes in Behavior" was given by Dr. John C. Whitehorn who was followed by papers given by Drs. Parsons entitled "Sociological Factors in Changing Behavior: The Therapeutic Process as a Prototype of Social Process", and by Dr. Anatol Rapoport who spoke on "The Role of Symbols in Changing Behavior". Dr. Rapoport is Assistant Professor of Mathematical Biology at the University of Chicago.

Following these presentations a panel discussion on "Factors Operating in Psychotherapy" was undertaken by the following distinguished discussants.

Franz Alexander, M.D., Director, Chicago Institute of Psychoanalysis, Chicago, Illinois.

Frieda Fromm-Reichmann, M.D., Clinical Director, Chestnut Lodge, Rockville, Maryland.

Florence Powdermaker, M.D., Associate, William Allison White Institute of Psychiatry, New York.

Carl R. Rogers, Ph.D., Professor of Psychology, University of Chicago, Chicago, Illinois.

DR. WINTROBE SPEAKS

Dr. Maxwell Wintrobe, Professor of Medicine of the University of Utah Medical School recently spoke at the School of Medicine on "Experimental Studies in Macrocytic Anemia; their Significance in Relation to Pernicious Anemia and Related Disorders". Dr. Wintrobe spoke under the auspices of the Alpha Omega Alpha Honor Medical Society.

DEPARTMENT OF OBSTETRICS

Dr. Louis H. Douglass recently read three papers entitled: "Postpartum Hemorrhage"; "Newer Trends in Obstetrical Analgesia and Anesthesia"; and "The Changing Concepts of the Indications for Cesarean Section", these papers being presented at the meeting of the Southwestern Medical Association in Albuquerque, New Mexico, October 30, 31, and November 1, 1952.

On November 12 Dr. Douglass discussed a paper by Dr. Matthew W. Weis entitled "The Function and Duties of a Maternal Mortality Committee", this paper having been presented at the Southern Medical Association meeting held at Miami, Florida. Dr. Douglass also presented a paper to the Miami County Obstetrical and Gynecological Society entitled "Trial Forceps".

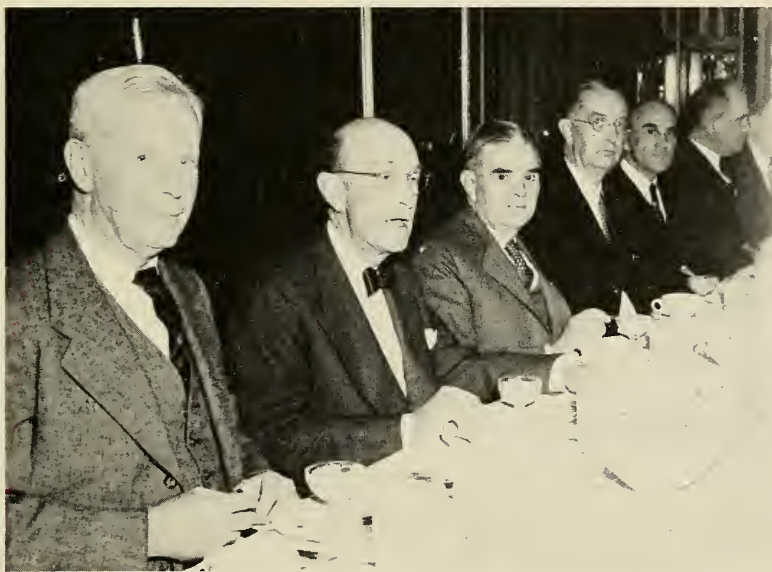
At the first meeting of the American Academy of Obstetrics and Gynecology, Dr. Douglass, who currently serves as the Society's first Vice-President, presented a paper entitled "Cerebral Dysrhythmia and the Acute Toxemia of Pregnancy".

Dr. S. Malone Parham, resident in obstetrics at University Hospital during the year 1951-52, has recently opened his office in Henderson, North Carolina for the practice of obstetrics and gynecology.

Dr. J. E. Savage recently read a paper entitled "The Management of the Third Stage of Labor" at the Southern Medical Association meeting at Miami, Florida.

DR. BAGLEY HONORED

Over 100 members of the Faculty of the School of Medicine, friends, residents, and associates of Dr. Charles Bagley, Jr., honored his long period of service to the



School of Medicine at a testimonial dinner held at the Park Plaza Hotel on December 4, 1952.

Dr. Louis H. Douglas acted as toastmaster. Testimonials were presented by Drs. Arthur M. Shipley, H. Boyd Wylie, Maurice C. Pincoffs, Charles Reid Edwards and James G. Arnold, Jr. Dr. Bagley was then presented with a silver tray inscribed as follows.

*Dr. Charles Bagley, Jr.
from his friends
in recognition of his distinguished contribution to medicine
as a Teacher and Neurological Surgeon
University of Maryland
Baltimore, Maryland
December 4, 1952.*

DEPARTMENT OF CLINICAL PATHOLOGY

Dr. Milton S. Sacks recently participated in a conference on Erythroblastosis Fetalis sponsored by the M. & R. Laboratories, and held at the Children's Medical Center, Harvard University School of Medicine on November 21 and 22, 1952.

The Department of Clinical Pathology also participated extensively in the Post-graduate Training Course sponsored by the American College of Physicians and held at the University of Maryland from December 8 to 13, 1952.

MEDICAL LIBRARY NOTES

October twenty-third was the hundredth anniversary of the birth of Dr. Randolph Winslow, distinguished alumnus and faculty member of the School of Medicine. To



commemorate the date, Dr. Winslow's granddaughter, Elissa Woolford Jones of Atlanta, Georgia, sent to the library a beautiful basket of flowers. A display was arranged around these flowers, showing two pictures of Dr. Winslow, his thesis submitted for the degree of M.D., a bibliography of his writings, and a bound volume of his reprints. Students and other library patrons showed a keen interest in the material exhibited. The library was especially pleased to pay tribute to a man whose name, in his own and succeeding generations, is associated with tangible devotion to the advancement of library interests.

Librarians, like other people, thrive on expressions of appreciation. It was gratifying to receive the following letter in October.

Dear Mrs. Robinson:

I want to thank you for the help given me last spring by members of the Library Staff in working on the research problem "Infant Feeding in the American Colonies." My essay won the award offered by the American Dietetic Association and I could not have done this without the help of the libraries and librarians.

Very sincerely,
Felisa J. Bracken

The following alumni and other friends presented books and journals to the library between May 1 and November 1, 1952:

Dr. Margaret Ballard	Dr. Byruth Lenson-Lambros
Dr. O. T. Beall, Jr.	Dr. C. H. Lupton
Dr. C. J. Carr	Mrs. G. E. McCaskey
Dr. R. M. N. Crosby	Dr. J. H. Marchant
Dr. G. E. Gibbs	Dr. H. W. Newell
Dr. Maude Glasgow	Dr. R. T. Parker
Dr. S. S. Glick	Dr. M. C. Pincoffs
Dr. A. E. Goldstein	Dr. M. S. Sacks
Dr. F. W. Hachtel	Dr. J. E. Savage
Mrs. J. D. Holly	Dr. W. H. Shealy
Dr. S. M. Jacobson	Dr. E. R. Shipley
Dr. E. J. Kempf	Dr. W. H. Toulson
Dr. J. C. Krantz, Jr.	Estate of Dr. Henry Von Dreele
Dr. A. M. Kraut	Dr. H. B. Wylie

ANNOUNCEMENT

First World Congress on Fertility and Sterility

The First World Congress on Fertility and Sterility will be held on May 25-31, 1953, at the Henry Hudson Hotel in New York City. An internationally sponsored Society, the Congress will feature 23 scientific sessions embracing the entire field of fertility and sterility including sections dealing with socio-economic factors and psychosomatic aspects. Sessions will be conducted in English, French and Spanish, with the use of earphones and simultaneous translations.

Those who plan to attend should write as soon as possible to the Chairman of the Local Arrangements Committee, 1160 Fifth Avenue, New York 29, New York.

DEPARTMENT OF PEDIATRICS

Annual Pediatric Seminar Announced

The Department of Pediatrics announces the program for the annual Sunday meeting which will take place on April 12, 1953. The program will include the following topics.

1. The Common Respiratory Infections in Pediatric Practice—by Dr. Waldo E. Nelson, Professor of Pediatrics, Temple University, Philadelphia

2. Emotional Problems of Children Seen Frequently in Pediatric Practice—by Dr. Leo Kanner, Professor of Psychiatry, Johns Hopkins Hospital, Baltimore
3. Immunization Procedures in Pediatrics—by Dr. Aims C. McGuinness, Dean, Graduate School of Medicine, Assistant Professor of Pediatrics, University of Pennsylvania, Philadelphia.
4. Common Urologic Problems in Children—by Dr. Meredith Campbell, Professor of Urology, New York University College of Medicine, New York City

DEPARTMENT OF GYNECOLOGY

Dr. J. Mason Hundley, Jr., Professor of Gynecology, was recently Moderator on a Panel for the American College of Surgeons meeting in New York, the subject being "The Influence of Gynecological Disorders Upon the Urinary System."

Dr. Hundley has also been appointed one of the Governors from the State of Maryland to the American College of Surgeons.

U.S.P.H.S. CANCER LECTURE

Dr. Harry E. Bacon of Philadelphia, Pennsylvania will speak at the Cancer Seminar to be held in Gordon Wilson Hall, University Hospital on April 15, 1953, the subject being "Carcinoma of the Rectum".

MERCY HOSPITAL SECTION

NEW ADMITTING PROGRAM

A featured part of the new construction at Mercy is the Admitting arrangement, which keynotes an efficient and relaxing atmosphere for the prospective patient.

After being received into the newly decorated waiting room, which is attended daily by members of the Women's Auxiliary, a patient is admitted and a complete history and physical examination including laboratory tests, is done in the adjoining examining room and laboratory. A house doctor, nurse and technician are in constant attendance.

This new method of admitting has proved efficient, time-saving, and most helpful to all departments throughout the hospital.

STAFF OFFICERS FOR 1952-53

At the October meeting of the Mercy Hospital Visiting Staff, the following doctors were elected officers for the coming year: Dr. Sol Smith, President; Dr. Joseph V. Jerardi, Vice-President; and Dr. James Russo, Secretary-Treasurer.

VISITING STAFF APPOINTMENTS

Recently appointed to the Mercy Hospital Visiting Staff are Dr. William D. Gentry, Jr., Dr. William C. Ebeling, and Dr. James L. Gerlach.

SERVICE NEWS

Dr. John M. Rehberger, Otolaryngologist on the Visiting Staff, was recalled to Service with the United States Army on November 15, 1952, and will be stationed at Fort Sam Houston, Texas.

MISS LEE—A TRIBUTE

With her retirement from active duty in the Dispensary, Miss Bertha Lee has thus closed a long and enviable period of unassuming and able performance of her duties with steadfast adherence to high ethical and moral civic ideals. She has been a friend to countless physicians, who, as students, made her acquaintance in the dispensary. They have learned to respect her even temperament, her quiet, unassuming and able performance of duties.

Miss Lee was born in Baltimore. Her father was Norwegian and her mother a Baltimorean. She studied music under her father, an accomplished musician, and also learned the art of china painting and fine needle work. She then completed her education at the Western High School. In 1926 she became a volunteer worker at



MISS BERTHA LEE

the old Children's and Babies' Clinic and in 1928 continued her duties as a full time member of the Staff. Miss Lee has remained in charge of the Social Service Department of the Pediatric Clinic ever since. No one will ever really know the untold amount of extracurricular work that she did among the poor and needy patients in their homes. Often this was done at great sacrifice of her time, money and effort without any thought of compensation other than that of which was related to spiritual satisfaction from a job well done. She was always interested in the unfortunate and helpless.

Those who had the privilege of working with Miss Bertha Lee have learned to love and respect her. Her retirement prompts a note of appreciation, not only to a fine person, but also as a symbol of those honored virtues which seem to be so infrequently encountered.

MARYLAND SOCIETY FOR MEDICAL RESEARCH NEWS

The film "Frontiers" an excellent motion picture dealing with the aspects of medical science and research through the use of experimental animals is available for projection for any scientific or lay group. The film was recently shown to the Maryland Academy of Sciences.

Thirteen dogs recently used by Dr. William R. Rever, Jr. of the Department of Surgery of the University of Maryland were awarded the Association's medal for service to humanity. Mrs. Jerome Sloman made the presentations. These dogs are now available for adoption.



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POST GRADUATE COMMITTEE SECTION

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HOWARD M. BUBERT, M.D., *Chairman and Director*

Elizabeth Carroll, *Executive Secretary*

Post Graduate Office: Room 600

29 South Greene Street

Baltimore 1, Maryland

MEDICAL TELEVISION WORKSHOP

A closed circuit clinical television workshop presentation will be conducted at the University Hospital on January 15, 1953 under the joint auspices of the Faculty of the School of Medicine, the staff of station WBAL-TV and the Postgraduate Committee. This event, the first in the history of the School of Medicine will be under the supervision of Dr. Howard M. Bubert.

A number of guests including engineers, members of the Maryland Academy of General Practice, members of the Faculty of the School of Medicine, students, and program specialists in both radio and television broadcasting will assemble in Gordon Wilson Hall at 9 A.M. using facilities supplied by station WBAL-TV through the courtesy of Mr. D. L. Provost, Vice-President, and superintended by Mr. John Wilner, Vice-President and Chief Engineer of WBAL-TV.

These facilities will include an operating room camera unit, a Videcon microscope camera*, and an additional camera unit which will be operated in the rotunda of the University Hospital on the 8th floor. From these three units and perhaps a 4th, will originate programs and clinics of a general medical educational nature. They will be taken by coaxial cable to Gordon Wilson Hall for viewing by the audience. There will be several medical and surgical clinics, a discussion on the use of radioisotopes, and several panel discussions. The exact program in detail will be published and furnished to all present.

This clinic-workshop is designed to demonstrate the value of television as both an intramural and intermural teaching medium in both undergraduate and postgraduate medical education. Those who will view this closed telecast will note that the television instrument offers unusual advantages and flexibility in the demonstration of certain conditions or diseases which do not lend themselves well to transporting from medical centers to outlying districts. It also brings the audience individually close to any operation or any intimate technical procedure, including the high power microscope, and the intimate details of certain physiologic and chemical procedures. It is not ordinarily possible for an audience to view these procedures unless the group is extremely small.

Television as a teaching medium is yet in its infancy. This clinical day is designed,

* Loaned through the courtesy of the RCA Laboratories, Princeton, New Jersey

not only to demonstrate the presently understood advantages of this medium in educational endeavor, but to stimulate new thinking along these lines. It might be possible in the future that a full clinical day of interesting and highly specialized instruction could be transmitted from a medical center to a local contingent medical society meeting at its own headquarters hundreds of miles away. Aside from the flexibility and the many facets offered by combined audeo-video education, the Postgraduate Committee feels that the ultimate possibilities for television as an instruction medium are yet to be fully explored.

Alumni and friends of the School of Medicine are urged to comment fully on this telecast and to send their suggestion to Dr. Howard M. Bubert, Chairman, Postgraduate Committee, Bressler Building, 29 South Greene Street, Baltimore.



SCHOOL AND HOSPITAL PLATES

Plates of the School of Medicine, University of Maryland, the new Hospital, and the Old Hospital are available. These white plates are 10 inches in diameter with black print. The price is \$2.50 each, plus 25 cents insurance and postage. Send order, stating the plates desired, with check to Mrs. Bessie M. Arnurius, Box 123, University Hospital, Baltimore, Maryland. Make check payable to NURSES ALUMNAE ASSOCIATION OF THE UNIVERSITY OF MARYLAND.

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The names listed above are officers for the term beginning July 1, 1952 and ending June 30, 1953.

PRESIDENT'S LETTER

In June, 1945, the State of Maryland initiated a Medical-Care program for indigents and during these past seven years, the plan has operated in a manner to win both the acceptance of the medical profession and the layman.

The most significant factor contributing to the success of this plan is what Archibald MacLeish recently referred to in an essay as the "central core of good Americanism—the Power of Choice". A citizen in a free republic has the right to insist upon the physician of his choice.

Along with this free choice of physician, the program also provides for fees for services. According to Dr. Herbert Notkin, assistant chief of the state health department's Bureau of Medicine, 75 per cent of the state's practicing physicians co-operate with the program and fees for their services accounted in 1951 for 68 per cent of the total cost of the program.

Recent figures show that 60 percent of those receiving this medical care are on the welfare rolls. This is understandable when one stops to remember that the indigent have more illness than the general population. At the same time long sieges of illnesses so drain finances that normally self-supporting citizens are often forced to seek aid from the state.

From 1947 to 1951, the program expanded rapidly showing an increase of over 10,000 patients treated under this plan. This increase would indicate that the program is a satisfactory one for both physician and the patient.

There has been some criticism of abuses of the plan but the overall picture con-

vinces one that these abuses have been kept at a minimum. With the cooperation of both participants—doctor and patient—as to limiting the number of calls, instruction of patients as to visiting the physician at his office and eliminating unnecessary house calls, writing fewer prescriptions, the Medical-Care program can continue to grow and perfect itself thus contributing to the solution of the problem of providing medical care for those who are medically indigent. This is one step in our constant fight against socialization—one problem not to be solved by the “left-wingers”.

D. J. PESSAGNO, M.D.,
Chairman, Board of Directors.

DOCTOR NOVAK TO RECEIVE AWARD

Alumni Association Selects Emil Novak for 1953 Honor Award and Gold Key

At a recent meeting of the Board of Directors of the Medical Alumni Association Dr. Emil Novak, B.M.C. 1904, eminent gynecologist and author, was unanimously selected as the recipient of the 1953 Alumni Honor Award and Gold Key.

Dr. Novak will be present at the exercises on June 4, 1953 and will deliver the principal address. Additional items concerning this honor will be contained in the April, 1953 number of the Bulletin.

NOTICE OF ALUMNI REUNIONS

Recently the Board of Directors of the Medical Alumni Association set aside the date of Thursday, June 4, 1953 as the annual Alumni Day. Due notice of the events and program for this annual activity will be contained in the April number of the Bulletin.

CLASS OF 1903 TO BE HONORED

At the annual Alumni exercises to be held on Thursday, June 4, 1953, the members of the classes of 1903 of the University of Maryland, Baltimore Medical College and the College of Physicians and Surgeons will be honored as the Medical Alumni Association bestows upon them their Fifty Year Certificates of service.

Members of the classes of 1903 include the following physicians whose addresses are known to the Medical Alumni Association.

UNIVERSITY OF MARYLAND

William I. Buppert	Samuel J. King
Joseph H. Cahoon	S. Dace McPherson
Henry P. Carter	Thomas A. Mann
Frank S. Cooper	Jefferson H. Minor
Joseph L. DeCormis	Eugene H. Mullan
Harry C. Donahoo	Robert W. Petrie
Joseph G. Evans	Charles R. Richardson
Robert W. Fisher	Walter D. Riordan
Willis B. Fitch	Leland B. Salters

Manuel Fossas	Daniel A. Watkins
Charles W. Gentry	Henry L. Whittle
Henry M. Hodgson	Fred J. Wilkens
Howard S. Holloway	Albert L. Wilkinson
George S. M. Kieffer	Mark S. Wilson
Calvin T. Young	

BALTIMORE MEDICAL COLLEGE

George M. Beatty	Herbert E. Laroque
Ferdinand L. Benz	William P. McGuire
Patrick Cunningham	Adelbert C. Matthews
Daniel A. Dees	John L. Meeker
Frederick Dugdale	Alfred N. Moore
Fred A. Edmunds	Richard M. Nelson
Charles B. Ensor	Joseph G. Noble
John Evans	Bert Leone Phillips
Edward F. Fitzpatrick	John J. Quinn
John E. Garner	Joseph F. Rooney
Arthur R. Gould	John B. Rutherford
Thomas J. Hagan	John B. Seeds
Will D. Hereford	Houghton C. Smith
Asa L. Hickok	William C. Stone
Charles H. Hoover	William Teepell
Harry W. Howland	William J. Trainor
John F. Jonas	Earl M. Vrooman
William F. Weitzel	

COLLEGE OF PHYSICIANS AND SURGEONS

Charles F. Abbott	Alston H. Lancaster
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Asher C. Biddle	Clarence W. Lurting
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George L. Faucett	Frederick W. Mayer
Edgar B. Friedenwald	George F. Sargent
Joseph A. Guthrie	Edward W. Sprague
J. A. Harold	Robert L. Stokes
Peter J. Johnson	J. Walker Thomas
J. John Lee Young	

QUESTIONNAIRE TO BE MAILED SOON

Beginning with the current year, members of the class of 1952 will be circularized as to their plans for the ensuing years and as to their entrance into specialties or other allied medical fields. These questionnaires, sponsored by the Medical Alumni Association, will be mailed some time within the next month.

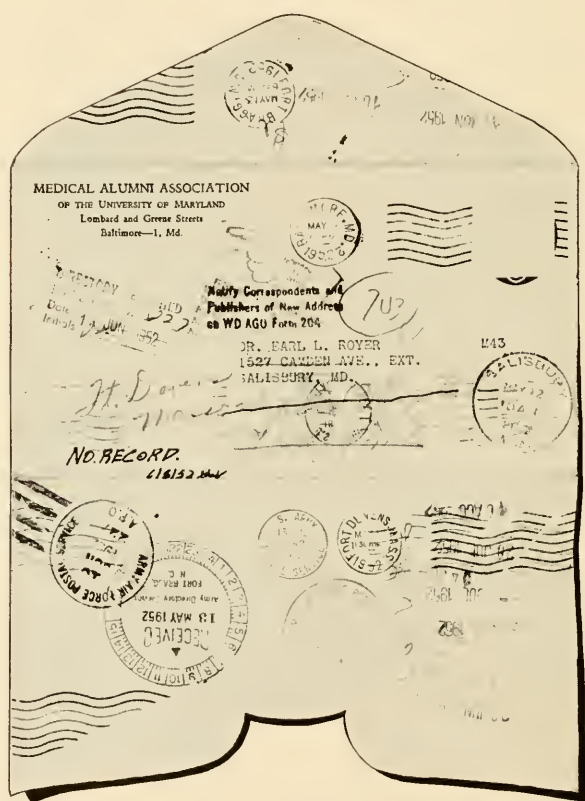
These questionnaires which will be issued this year only to the class of 1952 will be continued with each succeeding class for the first five years following graduation. Answers to the questionnaires will be published in the Bulletin.

It is the opinion of the Board of Directors of the Medical Alumni Association that the exchange of information between the several members of each class and between classes will serve to continue the friendships and the unity of each individual class during the first few years after graduation, the period of greatest movement and the period of greatest changes in ideas among any group of medical men.

If you receive a questionnaire will you please complete it and return it to the Medical Alumni Association as soon as possible.

YOU CAN'T SAY WE DIDN'T TRY

The "Cat" comes home



Reproduced here is a communication from the Medical Alumni Association addressed to Dr. Earl Royer, class of 1943. It left his Alma Mater on May 9, 1952 and reached Salisbury, Maryland the next day. Inquiry in Salisbury revealed that the doctor had moved to the Fort Devens, (Mass.) Hospital. However, at the Fort Devens address and at numerous other places throughout the country (see post-

marks) the doctor was not found. Directories were searched and finally the letter was forwarded to the Pentagon where again Army records were searched. Exhausted—postal authorities gave up and returned the letter to us, soiled but intact. It arrived on September 1, 1952, containing news of the Alumni Day activities “to be held June 5th”.

This 3 months useless odyssey is an example of what happens when you, the **Alumnus** do not inform us of your change in address.

Keep us posted—we'll keep you posted.

Send us your change of address!

ITEMS

Dr. Milton S. Sacks presented a paper entitled “The Diagnosis and Treatment of Acquired Hemolytic Anemia” at the annual meeting of the American Medical Association in Chicago, Illinois on June 11, 1952.

Dr. Jacob H. Conn, class of 1929, has been appointed to the National Board of Editors of the Journal of Clinical and Experimental Psychopathology. Dr. Conn's article “Don't Blame Your Parents” appeared in the October, 1952 issue of the Reader's Digest.

Dr. James A. Doukas, class of 1944, who recently completed a residency in general surgery at the Lutheran Hospital of Maryland has announced the opening of his office for the practice of general surgery at 101 East Preston Street in Baltimore.

Dr. Robert M. N. Crosby, class of 1943, who completed a residency in neurologic surgery at the University Hospital several years ago and who was associated with Dr. Douglas Buchanan in Chicago during the past year, has announced the opening of his offices for the practice of pediatric neurosurgery and neurology at 11 East Chase Street in Baltimore.

Dr. F. Mason Sones, Jr., class of 1943, now associated with the department of cardiovascular disease of the Cleveland Clinic, Cleveland, Ohio, recently presented a paper on “Medical and Surgical Management of the Patient with Mitral Stenosis” at the International Medical Assembly at Cleveland, Ohio on November 13, 1952.

Dr. Oliver P. Winslow, Jr., class of 1945, recently was qualified as a Diplomate by the American Board of Radiology. Dr. Winslow is now engaged in the practice of radiology at Miami, Florida.

Dr. Ernest A. Dettbarn, class of 1951, has completed his internship at the Lutheran Hospital of Maryland and is now in practice at Frederick, Maryland.

Dr. Guy M. Reeser, class of 1951, has completed his internship at the Lutheran Hospital of Maryland and is now in practice at St. Michael's, Maryland.

Dr. George M. Dunn, Jr., class of 1951, who was recently on the staff of the University Hospital in Baltimore, is now associated with Dr. Thomas Whaley at Princess Anne, Maryland.

Dr. John D. Rosin, class of 1942, formerly of the Resident Staff of the Lutheran Hospital, has recently completed a Fellowship in Proctology at the Mayo Clinic under Dr. Louis A. Buie. Dr. Rosin will limit his practice to the Diagnosis and Surgical Management of Diseases of the Anus, Rectum, and Colon. He has opened his office at 1010 Saint Paul Street in Baltimore.

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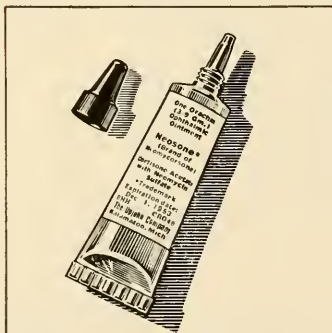
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EDITORIAL

EXPERIMENT IN NONSENSE

If present trends in history writing and in the recording of medical records continue, the enormous number of colloquialisms and unofficial abbreviations rapidly becoming "standard" within one institution might become unintelligible to those even practicing a few miles away. We refer explicitly to the mounting use of unofficial words, quasi-abbreviations and to even adroit combinations of capital letters. Should this trend continue, medical charts, if sent to another part of the United States, could conceivably be unintelligible unless accompanied by a glossary of terms from the forwarding institution. This fact becomes increasingly evident to those who edit medical literature and to those who are responsible for clinico-pathologic conferences.

Many are the symbols which have been devised in haste as short cuts. A few, such as "O.R." are relatively standard by tradition and perhaps are nation-wide. Some such as "T.B." stand for specific words and presumably have become semi-official. If the reasoning responsible for the abbreviation "T.B." is accurate, (meaning the first two consonants of the word identifies the word), then "M.N." should mean meningitis and "P.N." should mean penicillin.

There are other abbreviations, possibly rationally conceived, which again become confusing in that they are reproduced identically in other nomenclatures. "CPC" to the clinician means "chronic passive congestion". To the pathologist it means "clinico-pathologic conference". To the clinician Ca, the chemical symbol for calcium is often used for the word "cancer". Likewise B.P. is construed to mean blood pressure. As an official abbreviation it also has two other definitions and incidently stands for British Pharmacopeia.

It is neither our intent to cover the manifold possibilities of these ill-advised experiments, nor are we approving in any way this experiment in nonsense. Some far fetched combinations of capital letters such as OMPA and HASCVD challenge the imagination of the most polished cryptographer except of course, those in the originating institution where the letters are commonplace. Such ridiculous practices spring from a combination of haste, indifference and from poor supervision. It is prudent that medical educators set a proper example for medical students and young physicians; that those in charge of clinical clerks and medical records be adamant in their demands for records written in the English language and, lastly; that those upon whom the original authority is vested demand of their subordinates rigid adherence to the sound principles of good medical writing.

A STATISTICAL STUDY OF 200 CASES WITH TEN OR MORE YEARS INTERVAL BETWEEN PREGNANCIES*†

MARGARET B. BALLARD, M.D.

Several years ago the author reported a study of 100 pregnancies occurring ten or more years after the last previous pregnancy (1). The results of the study of this small group of patients seemed to confirm the impression that patients with a long interval between pregnancies had an increase in complications and operative deliveries above the general obstetric service.

An unselected group of 200 patients from the Obstetric Service of the University Hospital, Baltimore, who had an interval of ten years or more between pregnancies comprise the basis for this further study. There were 145 negroes and 55 caucasians. Four patients had not received any prenatal care. The youngest patient was 24 years and the oldest 46 years of age. One hundred and thirty-seven or 68.50 per cent were between the ages of 30 and 39 years. Table #1 gives the age distribution for the group.

Previous pregnancies totaled 440 full term, 26 premature, and 43 abortions with 377 living children at the time the patients came in for delivery. Complications of previous pregnancies, labors, and puerperiums are shown in Table #2. Table #3 gives the types of operative deliveries for these pregnancies. The complications listed are certainly not complete, as the majority of the patients were previously delivered elsewhere and they either did not remember or did not know what happened to them during their other pregnancies and labors.

The interval between pregnancies ranged from 10 years in 37 patients to 26 years in 1 patient. The average interval was 13.5 years with 78.50 per cent in the 10 to 15 years group. Table #4 shows the interval between pregnancies.

Complications of the present pregnancy are listed in Table #5 and are self explanatory. No further comment is necessary at this time.

Four patients were not allowed to go into labor and the duration of labor in 9 others was unknown. One hundred and six patients had labors of less than 10 hours while 19 patients were in labor for more than 25 hours. Twelve patients had labor of 40 hours or more, the longest being 80 hours. Thus we see that 9.50 per cent of the patients in this study had prolonged labor as compared with 2.43 per cent reported by the Obstetric Department in 1948-49. Table #6 gives the duration of labor for the group.

The complications of labor are found in Table #7. A percentage comparison with the 1948-49 Obstetric Department Report is given in Table #8. It is to be noted that placenta previa is increased approximately three times, abruptio placenta and contracted pelvis are doubled in number, while prolonged labor is four times as frequent as in the entire service.

Ninety-two patients delivered spontaneously at term and 9 spontaneously prematurely. Operative deliveries were carried out on 90 full term and 3 premature

* From the Department of Obstetrics, University of Maryland School of Medicine.

† Received for publication April 19, 1951.

TABLE 1
Age Distribution

YEARS	PATIENTS
20-24	1
25-29	40
30-34	76
35-39	61
40-44	21
45-49	1

TABLE 2
Complications of Previous Pregnancies, Labor and Puerperiums

Eclampsia	2
Toxemia, other	11
Hemorrhage, postpartum	5
Abnormal presentation	7
Cephalo-pelvic disproportion	1
Prolonged labor	6
Puerperal infection	8
Miscellaneous	12
Pyelitis	3

TABLE 3
Operative Deliveries of Previous Pregnancies

Cesarean section, classical	3
Cesarean section, low	1
Cesarean section, unknown	2
Cesarean section, multiple	1
Internal podalic version followed by breech extraction	1
Forceps	11

TABLE 4
Interval Between Pregnancies

YEARS	PATIENTS
10	37
11	28
12	30
13	19
14	22
15	21
16	10
17	7
18	9
19	5
20	4
21	2
22	4
23	1
26	1

pregnancies. Six patients aborted spontaneously. See Table #9 for further information on operative deliveries. The indications for Cesarean sections are found in Table #10 and need no further explanation. A percentage comparison of the type of delivery of the patients in this study and the Obstetric Department Report for 1948-49 is given in Table #11. The increase in operative deliveries shown in the 1948-49 report can be explained by the frequent use of control forceps during that

TABLE 5
Complications of Pregnancy

Preeclampsia.....	15
Eclampsia, antepartum & intrapartum.....	1
Hypertension with toxemia.....	11
Hypertension without toxemia.....	9
Tuberculosis, pulmonary, inactive.....	3
Heart disease.....	5
Glycosuria, suspected diabetes.....	1
Pyelitis.....	3
Uterus, myomata of.....	4
Uterus, bicornis.....	1
Cervix, infection of (biopsy 1).....	13
Varicosities.....	6
Vaginal bleeding.....	13
Threatened abortion.....	8
Unknown.....	5
Hyperemesis, (admitted to hosp.).....	1
Miscellaneous.....	10

TABLE 6
Duration of Labor

HOURS	PATIENTS
None.....	4
Less than 5.....	43
5-9.....	63
10-14.....	34
15-19.....	17
20-24.....	11
25-29.....	2
30-39.....	5
40 and over.....	12
Unknown.....	9

period. A criticism may be in order in the handling of 4 of the patients in that cephalopelvic disproportion was not recognized and the patients remained in labor for 36¹/₄, 43³/₄, 52 and 62 hours respectively without progress, this necessitated extraperitoneal sections.

Other operations and procedures incident to delivery include the application of a scalp clamp twice. Each time it was used in connection with placenta previa

TABLE 7
Complications of Labor

Placenta previa, total.	2
Placenta previa, partial.	5
Abruptio placenta, complete.	1
Abruptio placenta, partial.	3
Other antepartum hemorrhage.	1
Prolapse of cord.	1
Abnormal contraction (Bandl's ring).	1
Intrapartum fever.	3
Uterine inertia.	2
Prolonged third stage.	2
Contracted inlet.	2
Midplane contraction.	2
Inlet and midplane contraction.	2
Inlet, outlet and midplane contraction.	1
Asymmetrical contraction.	2
Cephalopelvic disproportion.	4
Presentation, breech.	11
Frank.	5
Footling.	2
Unknown.	4
Presentation, brow.	1
Transverse lie.	1

TABLE 8

COMPLICATIONS OF LABOR	THIS STUDY	1948-49 REPORT
	%	%
Placenta previa.	3.50	0.25
Abruptio placenta.	2.00	1.30
Contracted pelvis.	7.50	3.90
Prolonged labor.	9.50	2.43
Presentation, breech.	5.50	3.20

TABLE 9
Operative Deliveries

Low forceps, elective.	68
Low forceps, indicated.	2
Mid forceps.	1
Breech extraction.	6
Cesarean section.	13
Classical, elective.	1
Classical, labor.	2
Low, elective.	6
Extraperitoneal, labor.	4

marginalis. Occiput posterior position was corrected 7 times by forceps rotation and twice by manual rotation. In 4 cases of breech presentation forceps were applied to

the aftercoming head. It was necessary to remove the placenta manually in the case of uterus bicornis. Tubal ligation for sterilization was carried out on two patients. A hysterectomy for sterilization was performed on one patient who had myomata of the uterus.

Complications of the puerperium would seem to be minimal. It is interesting that the only postpartum hemorrhage occurred on the 14th day and was recorded as mild.

TABLE 10
Indications for Cesarean Sections

Low:	1. Placenta previa centralis
	2. Asymmetrical pelvis
Classical:	1. High Blood Pressure, partial placenta previa
Norton Extraperitoneal:	1. 62 hrs. without progress, cephalo-pelvic disproportion, small gynecoid pelvis. Baby's wt. 3402 gms.
	2. R.O.P. cephalo-pelvic disproportion, 36 $\frac{1}{4}$ hrs. Baby's wt. 4054 gms.
Water's Extraperitoneal:	1. Cephalo-pelvic disproportion, labor 52 hrs. Baby's wt. 3742 gms.
	2. L.O.P. cephalo-pelvic disproportion, labor 43 $\frac{3}{4}$ hrs. Baby's wt. 3345 gms.

TABLE 11

TYPE OF DELIVERY	THIS STUDY	1948-49 REPORT
	%	%
Spontaneous.....	53.5	39.6
Operative.....	46.5	60.4
Cesarean section.....	6.5	2.94
Cesarean section, extraperitoneal.....	2.0	.71
Forceps.....	35.5	54.40
Breech extraction.....	3.0	2.47
Forceps to after coming head.....	66.6	30.00

TABLE 12
Complications of the Puerperium

Endometritis.....	9
Pyelitis.....	1
Late puerperal hemorrhage.....	1
Secondary anemia.....	2
Urinary retention.....	4
High blood pressure not noted antepart.....	1

Two patients received one transfusion each. One had placenta previa centralis and one placenta previa partialis. Table 12 gives the complications of the puerperium.

There was one maternal death as a result of eclampsia. A rate of 5.24 per 1000 viable births as compared with the rate of 1.04 in the Obstetric Department 1948-49 report. A short history of the case follows:

E. H. negro, age 28, para 1-0-0-1, last pregnancy 11 years ago. Uncomplicated. E.D.C. October 25th. Pregnancy was normal except for a slight excess in weight

gain. She was seen in the Obstetric Clinic on July 31st, was thought to be normal and told to return on August 21st. On August 20th she came to the Emergency Room with the complaint of abdominal pain. A diagnosis of threatened premature labor was made and she was told to return to her home. Blood pressure was not taken and urinalysis was not done. She was next seen at 3:45 A.M. August 21st with a history of having had four generalized convulsions at home with loss of sight. She was comatose and the admission blood pressure was 220/140. Treatment consisted of sedation and intravenous glucose. She delivered herself spontaneously of a female fetus weighing 1000 grams. Duration of labor was unknown. The patient died on September 1st without regaining consciousness. Cause of death as stated on the pathologic report was; renal failure, caused by eclampsia, as a result of pregnancy. This death was recorded as "preventable" by the Maternal Mortality Committee of Baltimore.

One hundred and seventy babies weighed between 2500 and 4000 grams. Twelve weighed between 1000 and 2500 grams while six (abortions) weighed less than 1000 grams. There were 9 babies that weighed over 4000 grams. The mother of 1 of these

TABLE 13
Etiology of Neonatal Mortality

Stillbirths:	Maternal syphilis.....	1
	Preeclampsia.....	1
	Breech presentation.....	1
Neonatal deaths:	prematurity.....	1
	Pneumonia and hemorrhagic disease.....	1
	Intracranial hemorrhage.....	1
	No cause given.....	7
Abortions:		6

large babies showed persistent glycosuria during her pregnancy and now has severe diabetes mellitus. One hundred and eighty-one babies were discharged from the hospital alive and well. Four died before or during labor, 5 died within the first 24 hours after birth and 4 died in the hospital after the first 24 hours. In 2 cases the condition of the baby was not given. Table #13 shows the etiology of neonatal mortality. A pregnancy wastage of 9.50 per cent compares unfavorably with the Obstetric Department 1948-49 report of 5.41 per cent.

Twenty-six patients are known to have had from 1 to 4 subsequent pregnancies. Complications and operative deliveries of these pregnancies are found in Table 14.

A special study was made of these 200 cases dividing them into age groups. The only outstanding difference was the increase in frequency of hypertension in the 35 to 40 year old group. There was no appreciable difference in complications and operative deliveries in the longer and shorter intervals between pregnancies.

Comment: From the figures presented in this study it would appear that child-bearing is decidedly more hazardous when there has been an interval of 10 or more years since the last pregnancy. There was a decided increase in some of the major complications (placenta previa, abruptio placenta and toxemias), and the dura-

tion of labor was definitely increased. The incidence of major operative deliveries is greater than in the clinic as a whole, particularly cesarean section which in this study was the method of delivery in 6.50 per cent of the cases as compared with 2.94 per cent for the entire clinic.

There was a definite increase in fetal and neonatal mortality in this group, a goodly portion of which can be explained by the complications which the mother presented. There does appear to be a tendency for the babies to be somewhat larger, but this probably is explained on the basis of advancing years of the mother, rather than on a long interval between pregnancies.

It is difficult to give any acceptable reasons for the increase in pathology encountered in this group of cases. In seeking reasons for the long period of sterility, it was found that there were 2 divisions of about equal size; in one the sterility was

TABLE 14
Additional Pregnancies, Complications and Operative Deliveries

COMPLICATIONS AND OPERATIONS	PATIENTS	DELIVERIES
None.....	9	1
None.....	3	2
None.....	1	4
Prolonged labor.....	2	1
Hypertension.....	2	1
Forceps and breech extraction (twins).....	1	1
Low forceps, median episiotomy and repair.....	2	1
Preeclampsia.....	1	1
Abortion.....	1	1
Stillbirth.....	1	1
One normal, one preeclampsia.....	1	2
One breech extraction, one shoulder dystocia.....	1	2
Premature rupture of membranes, Bandl's ring, shock, adherent placenta with manual removal, bicornuate uterus and cervix. Baby died-intracranial hemor- rhage.....	1	1

voluntary and in the other involuntary. In the latter group we might postulate that it was on an endocrine basis and that this same dysfunction was responsible for the difficulties observed. However, at best this can only be a postulation with little or no evidence to prove or disprove it.

In the first group, those in which the sterility was voluntary, it is more than likely that many of the complications are on the basis of advancing years. It would appear to have been definitely proved that pregnancy and labor carry an increasing risk as the mother grows older, regardless of parity or intervals. Thus can be explained the higher incidence of some of the toxemias, abruptio placentae, cardiac disease and diabetes or the prediabetic state if the latter term is acceptable. Is it possible that the increase in the incidence of placenta previa is on the basis of poor endometrium so that a larger area is needed for nourishment? And that this endometrial lack is again an aging process?

Whatever the reasons may be it would seem to have been demonstrated that the woman who has this long interval between pregnancies faces a somewhat greater risk than her sister whose pregnancies are closer. This increased risk should be realized and these patients watched most carefully during pregnancy and labor.

While the fetal mortality in this group was high it was observed that those babies which survived appeared to do exceptionally well and almost invariably left the hospital in excellent condition.

REFERENCE

1. BALLARD, M.: A statistical study of 100 cases with a 10 year or more interval between pregnancies; Bull. School of Medicine, University of Maryland, **23**: 3, (Oct. 1938).

POSTPARTUM COLPOPERINEOPLASTY*

C. RICHARD A. GILBERT, M.D.

For many years the operation of colpoperineoplasty and repair of the rectocele, performed immediately postpartum, has been accomplished with excellent results on the obstetrical service at the University of Maryland Hospital. It was decided to publish the results of a series of these operations to challenge some of the objections usually advanced against these operative procedures performed in the puerperium. There is hope that the procedures will be more generally adopted, thereupon, the benefits from adequate perineal support will be enjoyed by more multiparae.

Since 1940 a total of 436 colpoperineoplasties have been performed immediately postpartum at this hospital; the results of the operation have been excellent but until recently no careful study of the blood loss during the operation, or certain other details have been considered. The following report is an evaluation of 27 colpoperineoplasties.

METHODS AND RESULTS

It is not necessary to describe the well known method of performing the perineoplasty or repair of the rectocele. Suffice to say, the operative technique used in the cases presented is similar to that described for these procedures in TeLinde's "Operative Gynecology" (1). The usual perineal repair tightens the vaginal introitus so as to admit two fingers but at the termination of the procedure performed upon a patient who has just been delivered, the vaginal orifice must admit 3 fingers; this is to allow for postpartum involution. It is necessary to remain as close as possible to the mucosa in carrying out the dissection; if this dictum is adhered to, bleeding will be minimal.

In the 27 cases being reported, the blood loss was amazingly insignificant, the maximum recorded for the colpoperineoplasty was 110 cubic centimeters, the minimum was 5 cubic centimeters and the average was 32 cubic centimeters. The Carroll plate (2) was used to measure blood loss.

Table III, column 3, shows that if the colpoperineoplasty is combined with the repair of the rectocele, the average blood loss was 242 cubic centimeters.

The anesthesia employed was that which was used for delivery. By referring to tables I, II, and III, column 2, it can be seen that caudal, pudendal, saddle, spinal, cyclopropane and nitrous oxide-oxygen-ethyl ether were used on different patients. The patients were allowed out of bed as soon as anesthesia had lost effect. There was no postpartum morbidity.

Tables I and III, column 4, show the average hospitalization following delivery to be only 2.3 days. None of the patients developed postoperative complications. The length of hospitalization was tabulated, but for obvious reasons not considered, for those patients upon whom appendectomy and sterilization were performed.

* From the Department of Obstetrics, University of Maryland School of Medicine, University Hospital, Baltimore, Maryland.

TABLE I

COLUMN 1	2	3	4	5		6		7	8
	Anesthesia	Blood loss in cc.	Days confined to hospital following delivery	Number of days prior to delivery that the temperature was over:		Number of days upon which the temperature rose to: (postpartum)		Antibiotic used	Anatomical results of 6 weeks & 3 months
				99°	100°	99°	100°		
Colpoperineoplasty only									
1	Pudendal	30	2	0	1	1	0	0	Excellent
1	Saddle	5	2	1	0	2	0	0	Excellent
1	Pudendal	10	2	0	0	0	0	0	Excellent
1	Pudendal	31	4	0	0	1	1	Penicillin q.d. for 2 days	Excellent
1	Pudendal	45	2.5	0	0	0	0	0	Excellent
1	Saddle	110	4	0	1	0	0	0	Excellent
1	Saddle	40	2	1	0	1	0	0	Excellent
1	Saddle	8	1	0	0	0	0	0	Excellent
1	Saddle	38	2	0	0	0	0	0	Excellent
1	Pudendal	33	2	0	0	0	0	0	Excellent
Total 10 Patients		Average 35	Average 2.35						

TABLE II

COLUMN 1	2	3	4	5		6		7	8	
Colpoperineoplasty plus sterilization and appendectomy	Anesthesia	Blood loss in cc.	Days confined to hospital following delivery	Number of days prior to delivery that the temperature was over:		Number of days upon which the temperature rose to: (postpartum)		Antibiotic used	Anatomical results of 6 weeks & 3 months	
				99°	100°	99°	100°			
	1	Saddle	8	12*	1	0	3	0	Penicillin one dose	Excellent
	1	Pudendal	55	6	1	0	3	3	Penicillin for 1 day	Excellent
	1	Spinal	26	7	0	0	2	0	Penicillin for 3 days	Excellent
	1	Spinal	15	5	1	0	1	2	Penicillin for 4 days	Excellent
	1	Continuous Caudal	29	6	2	1	3	1	Penicillin one dose	Excellent
1	Spinal	40	4	1	0	4	0	Penicillin for 3 days	Excellent	
1	Continuous Caudal	1†	6	0	0	3	0	None	Excellent	
Total 7 patients		Average 29								

* Patient was in the hospital for 12 days after delivery because of severe sickle cell anemia.

† Patient also had a repair of the rectocele and the blood loss is given as the first figure in column 3 table III.

TABLE III

COLUMN 1	2	3	4	5		6		7	8						
Colpoperineoplasty plus repair of the rectocele	Anesthesia	Blood loss in cc.	Days confined to hospital following delivery	Number of days prior to delivery that the temperature was over:		Number of days upon which the temperature rose to: (postpartum)		Antibiotic used	Anatomical results of 6 weeks & 3 months						
				99°	100°	99°	100°								
				1	Cycloprop. & GOE	250	2			1	0	1	0	Penicillin for 2 days	Excellent
				1	Spinal	500	Not considered*			—	—	—	—	—	Excellent
				1	Spinal	425				0	0	4	0	Penicillin for 2 days	Excellent
				1	Saddle	130	2			1	0	2	0	0	Excellent
				1	Continuous	70	2			0	1	0	0	Penicillin for 2 days	Excellent
				1	Caudal										
				1	Saddle	340	2			0	0	0	0	0	Excellent
				1	Pudendal	100	2			0	0	1	0	0	Excellent
1	Saddle	200	3	1	0	2	1	0	Excellent						
1	Saddle	340	2	0	0	1	0	0	Excellent						
1	Pudendal	280	2	1	0	1	0	0	Excellent						
Total 10 patients		Average 242	Average 2.22												

* This patient also had sterilization and appendectomy.

The patients were checked six weeks and three months postpartum for evaluation of the anatomical results, symptoms referable to the perineal support and marital relations. Six patients complained of some tenderness in the perineal region when seen 6 weeks postpartum. Two of the patients complained of pain or tenderness when checked 3 months postpartum. There was no distress caused by inadequate perineal support, the general sense of well-being was improved, and the anatomical results were excellent in every case. Eight couples reported no change in marital relations and nineteen of the couples reported improved marital relations.

DISCUSSION

Every Gynecologist and Obstetrician has been harassed by numerous patients who complain of the symptoms caused by a relaxed vaginal outlet and every physician appreciates the fact that these symptoms can be abrogated by adequate repair of the perineum and vagina. It is, therefore, difficult to understand why the benefits of the colpoperineoplasty are not extended, immediately postpartum, to all pluriparae who have a relaxed vaginal outlet.

The fallacious reasoning that bleeding will be excessive during the operative procedure has restrained many obstetricians from attempting the colpoperineoplasty immediately postpartum. This idea is repudiated when it is noted that the average blood loss during the operation was only 32 cubic centimeters (Table I and II, column 3). It should be emphasized that the dissection must be carried out in proximity to the vaginal mucosa. The bleeding produced in the repair of the large rectocele in addition to the perineal repair, yields a definite increase in the blood loss, (table III, column 3) but this loss is not prohibitive. If the bleeding is annoying saline with epinephrine can be used for local infiltration and this will appreciably reduce blood loss. This was not necessary in any of the cases presented. It is probable that the abundant blood supply to the perineum and vagina promotes rapid and complete healing and thereby decreases the postoperative pain. It is amazing that only 2 patients (omitting those cases who had had abdominal operations performed) developed a temperature elevation of 100 degrees and this elevation occurred on only one occasion. Therefore, there was no maternal morbidity. (Table I and III, column 6). It should be noted that all of the patients were discharged within a few days following delivery and none were ill enough to seek further medical attention.

The cost of hospitalization should further recommend that colpoperineoplasty be done immediately postpartum. The average number of days spent in the hospital following delivery in those patients who had a perineal repair (this includes those patients who had a repair of a rectocele) was only 2.3 days (Table I and III, column 4). Also, it should be noted that delivery and the repair can be accomplished under the same anesthesia, this is especially true if the nerve block type of anesthesia is employed. If the repair of the relaxed vaginal outlet is postponed until 6 or more weeks postpartum, then it will be necessary for the patient to be subjected to anesthesia, recuperation from an operation, and in addition be forced to pay for this second hospitalization.

The results of the posterior repair were checked at six weeks and three months following delivery. In every case the anatomic result was excellent. This will no doubt

appear paradoxical to those who do not believe in early ambulation in those cases upon whom vaginal and perineal plastic operations have been performed. Five patients complained of tenderness of the posterior vagina six weeks after operation. In two patients this tenderness was present at the time of the three month check. The sexual relationship for both husband and wife were much improved in a majority of the cases.

SUMMARY

1. Twenty-seven colpoperineoplasties were performed immediately postpartum. The blood loss, postoperative course, length of hospitalization and end results are presented.

BIBLIOGRAPHY

1. TELINDE, RICHARD W., M.D.: *Operative Gynecology*, J. B. Lippincott Company, N. Y., 1946.
2. CARROLL, B. H.; MEIER, H. H.; STONE, O. H.: Immediate postpartum hemorrhage due to retained secundines. *American Jr. Obstetrics and Gynecology*, **55**: 620, 1948.

THE NATURE AND EVALUATION OF THE PROBLEMS IN THE DEVELOPMENT OF AN ACTIVE RESEARCH PROGRAM IN A STATE PSYCHIATRIC HOSPITAL*

ALBERT A. KURLAND, M.D.

In this study, an attempt will be made to review the problems encountered in the development of an active research program in a state mental hospital. As a basis for orientation, the background of the hospital will be sketched very briefly. In 1947, the Spring Grove State Hospital, located in Catonsville, Maryland, and within the metropolitan Baltimore area, celebrated its 150th anniversary (1797-1947), placing it as the third oldest mental hospital in the United States. In this period, the patient census has grown from a few dozen to almost 3,000. Its physical plant has managed to keep pace, but with a chronic bursting at the seams. A few years ago the seams finally gave way, causing much shame to the citizens of Maryland. Their embarrassment was hastily covered up by several million dollars worth of new construction.

The hospital when fully manned has a Staff of 20 psychiatrists, 3 clinical psychologists, 14 social service workers, 2 registered occupational therapists, 14 registered nurses, 9 psychiatric aides, and 272 attendants plus the volunteer service. The number of psychiatric physicians who must have passed through the institution in the past 150 years is legion. The care and treatment they gave was no doubt commensurate with the understanding and knowledge of the times, for at least there is no written record of any scandals. Any records of their observations that they may have left are exceedingly limited, for no data can be found dealing with any organized scientific studies. It has only been since the 1930's that written evidence of research at this hospital made its appearance in a rather sporadic fashion. It has continued in this manner up to the present.

The history of this institution and its research records reflect what seems to have occurred in most state hospitals. There is a certain amount of pride being expressed in the fact that, as early as 1936, the Spring Grove State Hospital was using several forms of shock therapy. There are references to investigations having been carried out with carefully controlled diets, drugs, and physiotherapy in malnourished and confusional patients. In later years, there were references to several studies done in collaboration with other psychiatric institutions in Baltimore; namely the Phipps Clinic of the Johns Hopkins Hospital, the University of Maryland, and the Sinai Hospital. These joint undertakings were in the fields of pre-frontal lobotomy and the blood chemistry of psychotic patients who had had shock and radiation therapy. There is brief data on an attempt made to develop a cephalin flocculation test in the psychoses, with emphasis on the catatonic states. In recent years, there have been studies in the fields of neuropathology, group psychotherapy, psychodrama and the use of glutamic acid.

The important thing about these studies is not what was done but how it was done, for there is evidence that such activities could have been multiplied and carried

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on in a more consistent manner. To find out why they were not, it was necessary to study the experiences of our predecessors and to examine the pitfalls that blocked their efforts. About 3 years ago we began to study the intricacies which make up the personality of this particular state psychiatric hospital, hoping to work out a plan to begin an investigative program by capitalizing on whatever was available.

From the scraps of information that have filtered down about individual investigators and their subsequent careers, these workers are seen as ambitious, energetic, conscientious men who eventually left the hospital and achieved recognition in the psychiatric world. Their investigative work was almost uniformly done at great personal cost to themselves; an extra-curricular activity in the face of an ever-present staggering clinical load. Their endeavors usually wound up as piecemeal jobs, with insufficient support and resources to maintain a consistent long term study in any area. This state of chronic frustration has brought about a rather ambivalent attitude toward research in the state mental hospital. The staff readily agreed that investigative work was urgently needed. However, many men had already "beaten their heads against a stone wall" of indifference and inertia. Therefore, except for a few notable exceptions, research has not thrived.

The tremendous number of variables, and the complexities in designing psychiatric experiments which will allow for adequately controlled studies, are painfully familiar to all psychiatrists. Adequate observations of the human personality are exceedingly intricate. They require the services of highly specialized personnel, such as psychiatrists, psychoanalysts, psychologists, psychiatric social workers, psychiatric nurses and aides, who must work as in integrated team and whose observations must extend over long periods of time. Such work cannot be done without money, and the cost is high.

There is no particular disagreement about what has just been said. Given adequate funds, such handicaps can be circumvented. It is difficult, then, to see why the cost cannot be faced if high-calibre investigative work is to be achieved, with a sufficient coefficient of reliability to make it reasonably valid. Why was psychiatry not given these adequate funds?

This question has been brought into sharp focus recently by Kubie, in an article entitled "Research in Psychiatry is Starving to Death", which appeared in *SCIENCE* for September 5, 1952. He attempts to analyze the curious psychosocial phenomena which make so much of the value and need of psychiatry. Also, the general impression is created that psychiatric research and psychiatric services are being generously and adequately supported, when, as a matter of fact, it turns out that psychiatric research is literally starving to death.

Statistics released by the National Association for Mental Health reveal that while \$28.20 was being spent for research per infantile paralysis patient, \$26.80 per tuberculosis patient and \$27.70 per cancer patient under treatment, a meagre \$4.50 was being spent per psychiatric patient. In the Spring Grove State Hospital, which has been averaging an annual operating budget of about two and a half million dollars, a total of less than \$500 was spent last year for research. Considering an average census of 2500 patients, the allowance per patient was 20 cents. This might be considered progress, since practically nothing was spent in previous years.

In regards to the future, the situation is brightening at this hospital. A Director of Research is to be appointed with a starting budget of \$11,000. Fifty thousand dollars had been requested. Then, as always, there were more urgent demands. With this starting budget it will mean that there will be available \$4.00 for research per patient per year.

While Spring Grove State Hospital enjoys a definite advantage in providing opportunities for clinical gratification through having close physical proximity to such metropolitan centers as Baltimore and Washington, with their universities and psychoanalytic institutes, this has not helped enough. Again and again a young, interested, individual, eager to make an investigative contribution, has been frustrated when his enthusiastic efforts were thwarted by routine administrative pressures. For example, he might begin working on one service, and then become interested in a problem on a particular ward. A loss in personnel would cause his sudden shift to another service, and that would be the end of his investigative effort. Or, if he were dependent on some laboratory aide, a sudden flux of routine work might hinder him, leaving his painstaking preparations to wither by the wayside.

If the investigator was not daunted by this, he was confronted with the contemporary problems of living. The routine clinical demands and pressures were such that he could not look for any stimulation or encouragement in research other than what came from within himself. What he read in print concerning the need of psychiatric research, plus his own observations on the constantly overflowing wards of the hospital, left him perplexed and confused by the contrasting reality of his own experiences in this endeavor. All that had been verbalized about the need became some kind of autistic thought process, to be shut off by a conformity to routine. If he remained undaunted and was still willing to carry on the fight, he had to sacrifice his leisure time to do so. He must hope that in some way his wife and family would be tolerant enough to get along in a sub-marginal manner on a salary inadequate to maintain the social status his position as a physician demanded. Or, having attended one of the local psychoanalytic institutes and matured as a result of its fruitful tutelage, he is compelled to accept the fact that state mental hospitals as they are have very little to offer him in terms of economic compensation and clinical satisfaction, in contrast to his colleagues' status in private practice. In the competition between the state hospital, with its overwhelming problems, and the fairly well-organized psychiatric units of the metropolitan centers, which give the individual an opportunity to function as he desires, the state hospital with its crying needs isn't even coming out as second best. Thus it appears that the initial goal will have to be the development of a setting which will encourage the investigative spirit to function. This would probably fall along the lines of a special research unit relieved of educational and treatment responsibilities. However, that was Utopia and as such was not available, but was kept in mind. If our planning goes well, it might materialize in the not-too-distant future.

With the situation being as it is, it becomes extremely important to study the designing of experimental procedures. This must be done in order that the experiment can be broken up into smaller parts which might be fitted into the daily activities of the hospital personnel, from clinical director and ward psychiatrist to nurse

and attendant, without constituting extra demands. The designer of the experiment would then function as a coordinator, piecing out the various components and maintaining the continuity of the experiment. When all the necessary observations are completed, the coordinator would attempt to assemble them into meaningful information.

For example, in some work with glutamic acid, it was observed that there was an effect on mood, attention and coordinating ability. This had been reported previously, by other investigators. The thought arose as to what effect glutamic acid might exert when given in combination with electro-convulsive therapy. Some of the questions which presented themselves were: 1) Would there be any acceleration in rate of improvement or, a longer state of remission? 2) What effect would there be on the post-electroshock confusional and amnesic state? 3) What light would be thrown on this by the employment of the psychologic testing of memory function? Many other areas could be investigated with this particular experiment. However, the main problem is to design the experiment so it can answer the questions asked and still be worked into the daily routine of the hospital. To be able to integrate such problems and to accomplish this in an effective manner necessitates familiarity with all the services in the hospital.

How effectively the coordinator can use his own personality to arouse enthusiasm and cooperation in the hospital personnel, and at the same time avoid arousing a guinea pig obsession in the already extremely sick and emotionally disturbed patients is another exceedingly complex and strategic point. The key to this problem is again the orientation of the hospital personnel.

*The first barrier has been breached when the ward psychiatrist, on whose service the experiment is to be done, has been enlisted as a member of the research team. It is not too difficult to enlist the help of the nursing and volunteer services. The attendants on the ward have been found to be enthusiastic and cooperative if they are dealt with as part of the team. Of course, this means presenting something of the problem in a manner which is comprehensible to them. The understanding, attitudes, and level of comprehension of the personnel who will come in contact with the patients have to be studied and equated carefully for the purposes of the experiment. Even such things as the physical location of the ward, the number of patients on it, etc., have to be taken in account, for it is not easy to obtain a ward for special studies. Then there are the administrative problems with the Clinical Director, Superintendent and Commissioner of Mental Hygiene. If they can see no excessive demands or danger, they give their approval.

The last point which I wish to present is the need for integrating these investigative units into a network among the psychiatric hospitals, in order that cooperative research projects can be carried out. An example of what can be accomplished in this direction is afforded by the studies of Hoch and his co-workers in New York, organized through the Committee of Therapy of the American Psychiatric Association. Through a pooling of resources and the setting up of standardized protocol, several psychiatric hospitals were enabled to test out a new treatment procedure, simultaneously, and, with their conclusive results, to save years of fumbling research. There is a great

need for many more of these studies, and for their organization in an overall plan so designed that it can be handled within the limitations of the State Hospitals.

This can be illuminated by a problem which came to our attention recently in this hospital. We had read reports in the literature which indicated that brief stimulus therapy was considered to be equivalent to, or as effective as, insulin therapy. If this were so, it would be a decided advantage, since it would reduce the treatment cost to the hospital by decreasing both the number of personnel needed and the cost of the medication. The reliability of these reports will have to be investigated and confirmed, chiefly by units designed to study this particular problem.

These are some of the things for which we have been struggling at our hospital. An important, though tentative, beginning has been achieved in this direction by the decision of the Commissioner of Mental Hygiene to create a Director of Research. This is a large step forward, one which will make possible a tremendous amount of pioneering work. One of its ultimate goals will be the bringing about of conditions in which the research-minded psychiatrist will be given the opportunity to develop his creative efforts, with mutual benefit to society and himself.

Such a director, who must eventually translate experimental designs into reality, will have to be an individual who has had much service and is mature enough in the complexities of his institution to be understanding and resourceful. He must be aware of the special problems and the individual natures that he is dealing with, and how his approaches must be tactfully governed.

In conclusion we all know only too well that many years of investigative work must be carried on before some of the fruits of these labors can be realized. Any consideration which conserves the strength and efforts of the investigators and makes them more effective agents, warrants evaluation. Their long range goals must always be kept clearly in view. This necessitates that the design of our approaches constantly be under observation or the creeping paralysis of obsolete methods will drain the vitality of our efforts.

REFERENCES

- KUBIE, L. S.: Research in psychiatry is starving to death. *Science* **116**: 239-243, Sept. 5, 1952.
- Facts and figures about mental illness and other personality disturbances. The National Association for Mental Health, Inc., 1790 Broadway, New York 19, N. Y.
- History of the Spring Grove State Hospital, One hundred and fiftieth Anniversary, 1797-1947. Pamphlet published commemorating this anniversary.
- Evaluation of Histamine Therapy in the Psychoses. The Committee on Therapy of the American Psychiatric Association, Paul H. Hoch, Chairman. *American Journal of Psychiatry* **109**: 229-231, Sept. 1952.

DIVERTICULITIS OF THE COLON*

THURSTON R. ADAMS, M.D. AND ERWIN R. JENNINGS, M.D.

Colonic diverticulitis commands the interest of both the internist and the surgeon. Because of the high mortality and morbidity still attendant on this disease, it is not untimely to attempt to analyze those factors which appear to contribute to unsatisfactory results, the methods of treatment, and if possible, to suggest appropriate corrections. Forty-six cases of acute diverticulitis of the colon, proved by roentgenologic, surgical, or pathologic criteria, were seen in the University Hospital from 1937 to 1947 inclusive. An analysis of this series reveals findings which coincide with other reports and suggest modifications of our present methods of management.

INCIDENCE

Diverticulitis is a relatively rare condition. Though diverticulosis is said to be present in 5 per cent of those of 40 years of age or over (1), superimposed inflammation is seen in only about 0.4 per cent in this age group (2). Still, most cases of diverticulitis are over the age of 40 and in this series 41 cases, or 89 per cent, so conformed.

Males were affected somewhat more frequently than females in the ratio of 27 to 19. Negroes constitute 6 of the 46 cases. Thus, diverticulitis is a relatively rare condition predominantly seen in older people, slightly more common in men, and infrequent in negroes.

ETIOLOGY AND PATHOLOGY

The cause of diverticulosis is unknown. Several predisposing causes seem to play a big factor in the formation of diverticula. Increasing age, constipation, loss of elasticity of supporting tissue, and venous congestion all seem to play a part. As most acquired diverticula of the colon are found chiefly between the longitudinal bands, it can be assumed that atrophy and stretching of the circular musculature of the colon are concerned in the process (3).

Diverticulitis is the result of an inflammation in 1 or more diverticula and varies in degree with the extent and depth of the involvement. Diverticula of the sigmoid flexure are most frequently involved. In 27, or 59 per cent, of the cases in this series the sigmoid was affected.

The pathologic changes are divided for simplification into acute and chronic diverticulitis. Acute diverticulitis embodies 1) acute catarrhal diverticulitis, 2) acute suppurative diverticulitis with or without perforation, 3) acute gangrenous diverticulitis with or without perforation. Chronic diverticulitis embodies 1) recurrent remissions and exacerbations of acute diverticulitis, 2) and/or a low grade inflammatory condition which leads to marked thickening and sometimes obstruction.

The complications encountered in diverticulitis result from any one of or a combination of the pathologic processes just mentioned. The complications encountered are 1) perforation with peritonitis, 2) perforation with abscess formation, 3) perforation

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with fistula formation, 4) obstruction, 5) bleeding. Twenty-two cases with complications were encountered in this series.

The most frequent complications were perforation with peritonitis and intestinal obstruction. Bleeding was encountered in only two of the 46 cases and represents the rarest complication seen. Young (4) lists bleeding in 5 to 17 per cent.

Clinical Manifestations

Pain is the most common symptom in diverticulitis (5), is thought to be predominantly caused by spasm, and is characteristically intermittent in character. It

TABLE 1

<i>Ages</i>	<i>No. of cases</i>
20-30	1
30-40	4
40-50	9
50-60	16
60-70	11
70-80	5
80-90	0

TABLE 2

<i>Site</i>	<i>No. of cases</i>
Cecum.....	4
Hepatic Flexure.....	1
Transverse Colon.....	2
Splenic Flexure.....	1
Descending Colon.....	11
Sigmoid.....	27

TABLE 3

*Complications — 22 Cases**

Perforation with abscess.....	6
Perforation with peritonitis.....	7
Perforation with fistula.....	4
Intestinal obstruction.....	7
Bleeding.....	2

* Four cases had two complications.

may vary from a feeling of mere uneasiness in the lower abdomen to an intense sharp boring pain.

Constipation is a common symptom and may alternate with diarrhea. The stools rarely contain mucus or pus. Flatulence and nausea are fairly frequent complaints but vomiting is rare. Tenderness in the left lower quadrant can usually be elicited and tumefaction may be expected in 31 per cent of cases (Rankin and Brown (6)).

In the acute phases the temperature and white cell count are usually elevated. Colicky pain, distention, nausea, vomiting, and obstipation indicate the presence of obstruction.

Diagnosis

Provided a correct diagnostic routine is followed diverticulitis presents no great difficulty in its recognition. In addition to routine study, such special investigation as sigmoidoscopy and barium enema should yield useful information.

A history of left lower quadrant pain in a patient over 40 associated with constipation, nausea, temperature elevation, and elevated white cell count point toward diverticulitis. Tenderness on pressure in the left lower quadrant, varying in location from the iliac fossa to the mid-hypogastric zone, gives further evidence (7). Rigidity is sometimes present and a palpable mass is occasionally encountered. Sigmoidoscopic examination done with the utmost of care may show spasm, hypermotility, narrowing, mucosal edema, partial fixation, and signs of an extraluminal mass. However, barium enema supplies more accurate information in that regional diverticula are almost always demonstrated, the remainder of the aspects varying with the character of the inflammatory process. In acute diverticulitis there is usually a segmental spasm of the colon, but in chronic disease associated with organic narrowing, a more constant filling defect may be expected. The differentiation from carcinoma presents a more delicate problem. The long, gradual, uniform narrowing consistent with an intact mucosa and extrinsic inflammation contrasts sharply with the abrupt, short, irregular outline of a neoplasm (8). But the final diagnosis may not even be apparent at operation, so close is the resemblance in all features except microscopic pathologic findings. Also the coexistence of diverticula and carcinoma must not be overlooked.

Treatment

Expectant treatment, consisting merely of warm saline enemas, antispasmodics, antibiotics, low residue diet and bed rest suffice in the majority of cases of acute diverticulitis. Smithwick (2) so treated 80.8 per cent in his series, the remainder requiring some form of surgical intervention for complications that threatened life or increased morbidity. Of the 46 cases in this series only 22 or 47.8 per cent (including six explored and promptly closed) were treated along medical lines. This low figure may be explained on the basis of incomplete investigation of some suspected cases, not proved, and therefore not included in this series. Most likely to respond to conservative measures are those in which the inflammatory process is confined to the diverticulum itself or its immediate vicinity. However, surgery has been invoked many times to rule out other conditions or to ensure that no serious complication is being overlooked.

Definitive measures consist of 1) drainage, 2) proximal colostomy or cecostomy, 3) resection of the entire process, 4) exteriorization or 5) a combination of these methods. In the rare condition of a single diverticulum with acute catarrhal inflammation the diverticulum may be inverted or resected, and this applies especially to lesions of the cecum. Drainage is instituted in cases of a localized abscess and rather forlornly in cases of perforation with spreading peritonitis. Transverse colostomy is resorted to in some cases of acute diverticulitis, obstruction, fistula formation prior to reparative surgery, and sometimes in the presence of abscess, and dubiously when bleeding is the presenting symptom. Diversion of the fecal stream plays a double role, first as a means of putting the inflamed part at rest and second, as a means of

clearing the bowel preliminary to reparative surgery. Resection can be done only if the diverticulitis is well defined and if there is no peritonitis. Exteriorization of the entire process can be done only if the disease is well localized and there is sufficient mesentery to permit it, but since the sigmoid colon is the most frequent site of involvement the technical difficulties are such that it is an infrequently used procedure.

A summary of the operative procedures used and the results are presented in Table 4.

TABLE 4

Number of cases.....	46
Operations.....	30
Exploratory laparotomy only.....	6
Reparative surgery.....	24

Reparative Operations—24

TECHNIQUE	CASES	RESULT
Drainage only.....	6	1 died (peritonitis); 5 improved
Colostomy with or without drainage.....	2	2 improved
Cecostomy with or without drainage.....	1	1 improved
Resection or inversion of diverticulum.....	3	3 improved
Primary resection of bowel.....	6	1 died (pulmonary embolus); 5 improved
Resection of bowel with proximal diversion of fecal stream.....	2	1 died (pulmonary embolus); 1 improved
Exteriorization of loop of bowel.....	2	1 died (cardiac failure); 1 improved
Dissection and excision of fistula with drainage...	2	2 improved

RESULTS

In this series of 46 cases of proved diverticulitis, 30 cases were operated on and 16 required no operation. Exploratory laparotomy alone was done in 6 cases. The remainder required some type of reparative procedure.

Drainage alone was required in 6 cases of this series. Five cases improved, with one death which was the result of peritonitis. Diversion of the fecal stream was done in 5 cases with resection of the involved bowel in 2. A Mikulicz procedure was done in 1 of these cases with subsequent death caused by pulmonary embolism. Resection or inversion of a lone diverticulum was done in 3 cases with good results.

Exteriorization of the entire process was applicable in 2 cases with successful results in 1 case. The other case was in poor condition and died of cardiac failure. Primary resection of the involved bowel was applicable in 6 cases. Five of these patients were asymptomatic postoperatively. There was one death as a result of pulmonary embolism.

Mortality: There were 5 deaths in this series of 46 cases of acute diverticulitis. One patient died of cardiac failure, 2 of pulmonary embolism, and 2 of peritonitis. One death because of peritonitis was seen in the group treated medically. It is interesting to note that the only deaths from peritonitis were seen in the first 5-year period be-

fore the introduction of present-day antibiotics. This mortality represents approximately 11 per cent of this series of 46 cases. Of 24 patients requiring reparative surgery, there were 4 deaths or a mortality of $16\frac{2}{3}$ per cent.

SUMMARY

1. Forty-six cases of proved diverticulitis were seen in the University Hospital from 1937 to 1947 inclusive.

2. The age incidence, sex, race, and site of predilection correspond with those of previous reports.

3. Even though diverticulitis is primarily a medical disease, surgical intervention is sometimes required.

4. In addition to the other standard surgical procedures advocated in diverticulitis, primary resection of the entire process is sometimes applicable.

5. There were 4 deaths following surgery and 1 death in the non-surgical group, representing a surgical mortality of $16\frac{2}{3}$ per cent, an over-all mortality of 11 per cent.

BIBLIOGRAPHY

1. BROWN, P. W.: The treatment and prognosis of diverticulitis of the colon. *Amer. Jour. of Surg.*, **46**: 162-170, 1939.
2. SMITHWICK, REGINALD H.: Experiences with the surgical management of diverticulitis of the sigmoid. *Ann. of Surg.*, **115**: 969-985, June 1942.
3. FANSLER, WALTER A.: Diverticulosis and diverticulitis with particular reference to the large bowel. *Trans. Am. Proct. Soc.*, **41**: 231-244, 1940.
4. YOUNG, EDWARD L., AND YOUNG, EDWARD L., III.: Diverticulitis of the colon. *New Eng. Jour. of Med.*, **230**: 33, January 1944.
5. SHIPLEY, ARTHUR M., AND GERWIG, WALTER H., JR.: Acute diverticulitis of the colon. *Surg. Gyn. and Ob.*, **69**: 474-483, October 1939.
6. RANKIN, F. W., AND BROWN, P. W.: Diverticulitis of the colon. *Surg., Gyn. and Ob.*, **50**: 594-598, March 1940.
7. ERDMANN, JOHN F.: Diverticulitis. *New Eng. Jour. of Med.*, **223**: 846, November 1940.
8. JOHNSON, WALTER R.: Is diverticulitis of the colon a surgical disease? *North Carolina Med. Jour.* **2**: 657-661, December 1941.

CHLORAMPHENICOL CREAM ON VARIOUS DERMATOSES*

HARRY M. ROBINSON, M.D. AND RAYMOND C. VAIL ROBINSON, M.D.

Systemic sensitization initiated by the local application of allergenic substances is a well recognized phenomenon. For this reason, many dermatologists view with disfavor the indiscriminate topical use of penicillin or the sulfonamide drugs, although these preparations enjoy wide usage by physicians.

The need for an effective local anti-bacterial agent other than insoluble mercury compounds have been apparent to us for many years. The answer was found in part with the elaboration of synthetic organic chemicals such as Furacin® and Vioform®, and the discovery of antibiotic substances which were not intended for parenteral administration, such as bacitracin and tyrothricin.

During the past three years, there has come into prominence a group of antibiotics derived from the genus streptomyces, all with wide anti-bacterial spectra, adaptable to oral and parenteral administration, and with few serious adverse reactions.

Because of the low incidence of sensitization, it was suggested to the manufacturer that he prepare an ointment or cream for local use in various dermatoses, particularly those in which an infectious element was present. This was met with eager cooperation, and a supply was offered us to evaluate from the standpoint of therapeutic effect and sensitizing properties. Our results are as follows:

We have, so far, treated 191 patients, 151 of whom have been observed following conclusion of treatment, as outlined in Table 1.

Three preparations of chloramphenicol were used in this study. The first furnished us was a 1 per cent mixture in a vanishing cream base. Later, because it was felt that a higher concentration might prove more effective, we were supplied with 2 per cent creams, in a greasy, and a non-greasy base. There were no striking differences in our results with the 3 preparations, therefore, they are considered together.

During the period in which chloramphenicol cream was used, these patients were not treated with other forms of therapy which might have altered the clinical aspects.

Although the number of patients in each category is small, the results are such that some conclusions can be reached as to effectiveness of the treatment.

Acne Vulgaris

Twenty-one patients, ranging from 16 to 25 years of age, presented typical clinical symptoms of acne vulgaris. In 16 of these, the pustular element was markedly diminished in from 1 to 3 weeks. The remainder were unimproved during a similar period.

In no instance did we consider the cream sufficient to clear the condition completely, since comedones remained, and new acneform papules appeared in several instances. After this preliminary period, supplemental or entirely different therapy was instituted in all cases, and the patients were not considered further in this series.

* Chloramphenicol (Chloromycetin) cream was furnished through the courtesy of Park, Davis & Company.

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Seven patients with cystic acne were treated with a combination of chloramphenicol cream locally, and chloramphenicol by mouth, one gram daily, with excellent results in 1 to 2 weeks. These are not included in the present statistics, because of the oral medication.

Pyodermas

It was in this group of patients, as might be expected, that the best results were obtained.

TABLE 1

<i>Diagnosis</i>	<i>Number of patients</i>
Acne Vulgaris.....	21
Pyodermas:	
Impetigo contagiosa.....	23
Sycosis vulgaris.....	6
Folliculitis, pustular.....	4
Furunculosis.....	1
Dermatitis repens.....	3
Paronychia.....	3
Lupus erythematosus.....	5
Eczematoid dermatitis:	
Atopic.....	30
Contact.....	17
Seborrheic.....	5
Miscellaneous.....	33
	151

TABLE 2

Twenty-three Patients with Impetigo Contagiosa Treated With Chloramphenicol Cream

CURES			FAILURES	TREATMENT REACTIONS
Time required in days				
1-4 10 (43%)	5-7 (30%)	8 days or longer 4 (17%)	2 (10%)	1

Twenty-three patients with impetigo contagiosa were treated with the cream with results as shown in Table 2.

Ten patients were completely clear in 1 to 4 days, 7 within one week, and 4 by the end of the second week, for the cumulative cure rate of 90 per cent.

The results in sycosis vulgaris were good. Six patients were completely clear of lesions in 5 to 7 days. In none of these were adverse reactions noted. Several patients had had previous treatment with other forms of therapy, including penicillin ointment, without success.

Pustular folliculitis (other than on the bearded area of the face) also responded readily, 4 cases clearing in 5 days to 2 weeks.

Over a 3 week period, 1 patient with furunculosis improved.

Dermatitis repens, always difficult to treat, involuted in 2 to 3 weeks in 3 patients. A similar result was noted in 3 cases of paronychia.

Lupus Erythematosus

A peculiar reaction was noted in chronic discoid lupus erythematosus. In each instance, the patient claimed that the areas felt better, but no objective improvement was noted over a 2 to 8 week period.

Eczematoid Dermatitis

Atopic dermatitis, contact type dermatitis, and seborrheic dermatitis are included under the above heading.

Thirty patients with atopic dermatitis used the ointment for 1 to 3 weeks. Almost without exception, any pustular element which had been present was controlled in 2 to 5 days. Three people were forced to stop using the cream because of local irritation.

Surprisingly enough, in 17 of the remaining 27 patients, improvement was noted in the eczema itself, 10 being completely clear in 7 to 15 days.

An almost identical result was noted in contact and seborrheic dermatitis, a majority being improved or entirely clear in less than 2 weeks.

Miscellaneous Conditions

We routinely follow desiccations with an application of a solution of gentian violet. Many patients object to this procedure for esthetic reasons. During the course of this investigation, 11 patients who had had lesions desiccated were instructed to use chloramphenicol cream locally 3 times daily. No gentian violet was used. A satisfactory result was obtained in all but 1 patient who suffered local irritation.

Three patients with perleche was not benefited. Pruritus ani, epidermophytosis, plantar wart, dermatitis herpetiformis, acne rosacea, neurotic excoriations, acne keloid, tuberculosis verrucosa cutis, psoriasis, pemphigus vulgaris, herpes zoster, pyogenic granuloma, onychia, stasis ulcer, herpes simplex and pityriasis rosea (one patient each) were not influenced by the application of the cream.

Two patients with dermatitis venenata experienced relief of symptoms in 2 days. One patient with erosio interdigitalis blastomycetica had complete involution in 5 weeks (certainly not a dramatic result).

DISCUSSION

The immediate initial improvement in 16 of 21 acne patients justifies the use of this cream, at least until the pustular element subsides. As mentioned before, we do not think that chloramphenicol alone is sufficient to "cure" acne. However, it certainly can help the patient's mental attitude, as well as aid the physician early in the treatment of such patients with superficial pustules.

Pyoderma responded rapidly, with a minimum of treatment reactions. Sycosis vulgaris, which is frequently treatment resistant, proved amenable in each of our 6 patients.

Our results in impetigo were encouraging and we recommend the drug for this disease.

We were surprised at the beneficial effect on eczematous conditions, but no control series with the base alone was run. Because of this, we are unwilling to state definitely that chloramphenicol cream is of undoubted value, although it is our clinical impression that alleviation of symptoms was greater than would have been obtained with a simple emollient preparation.

We did not expect to obtain improvement in tuberculosis verrucosa cutis, neurotic excoriations, acne keloid and the other conditions which failed to respond.

SUMMARY AND CONCLUSIONS

1. One hundred and fifty-one patients with various dermatoses were treated locally with one of 3 preparations of chloramphenicol, and the results of therapy observed.

2. The results with each of the 3 preparations were so similar that they may be considered together. A 1 per cent suspension in a vanishing cream base is a satisfactory and relatively non-irritating preparation.

3. Some of our patients with pustular acne vulgaris had definite improvement in the first 2 weeks.

4. The best results were obtained in pyodermas, where the cream is definitely recommended.

5. Chloromycetin cream is a valuable addition to the group of drugs useful in the treatment of superficial infections.

VOLVULUS OF THE SIGMOID COLON DURING PREGNANCY*†

REPORT OF A CASE

HARRY C. HULL, M.D.

Volvulus of the sigmoid colon complicating pregnancy is a rare condition. According to O'Malley (1), there has been only 9 cases recorded in American literature, and 85 in world literature, through 1950. O'Malley reported another case in May, 1952, with a successful outcome for mother and baby and included some brief comments on the surgical management.

The following case is of interest in that; the volvulus was not recognized until 4 days after inception; labor was induced 3 days after onset, resulting in the delivery of a live baby; and the gangrenous sigmoid was successfully resected on a critically ill patient 4 days after the torsion occurred.

CASE REPORT

(U. H. # 71648) M. C., a 40-year-old white female, was admitted to the University Hospital in a critical condition, by ambulance transfer, from the Frederick City Hospital, on April 21, 1952, 32 hours after delivery of a normal 7½-pound girl. The patient, though toxic, was complaining of abdominal pain, distention and difficulty in breathing.

Her present illness began 4 days previously, with intermittent, colicky, lower abdominal pain, associated with marked abdominal distention. The patient administered several enemata, which were ineffectual. Then, she consulted her obstetrician, who admitted her to the local hospital, where more ineffectual enemata were given. Gastric siphonage was begun, intravenous alimentation instituted and the patient observed. The intermittent pain became less severe, but the distention increased. The patient was approximately 2½ weeks before term. The obstetrician elected to induce labor, which was performed 3 days following the onset of the abdominal pain and distention. She was delivered of a live, normal 7½-pound girl. Following the delivery, there was no improvement in the abdominal distention.

On the afternoon of the 4th day of illness, she was seen in consultation at the local hospital. Examination revealed an ill, toxic patient; pulse, 140; temperature, 101.6F; respiration, 30. The skin was hot and dry. There was marked abdominal distention, with a markedly dilated coil of bowel which was visible and palpable, filling the abdomen, with the convexity to the right. Moderate tenderness was present. No sounds could be heard on abdominal auscultation. Rectal examination was negative. A flat plate of the abdomen showed the large bowel distention typical of volvulus of the colon. A diagnosis was made of volvulus of the sigmoid colon with gangrene. Transfer to the University Hospital for definitive care was advised and accepted.

The past history is interesting, in that the patient had been troubled with con-

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† Received for publication Sept. 1952.

stipation since puberty. Bowel habits had been irregular, and there had been a generous employment of laxatives and enemata during her life. During her two previous pregnancies, there had been increasing trouble with abdominal distention.

Upon arrival at the University Hospital, the physical findings were essentially as noted above. The laboratory findings on admission were white blood cell count, 32,000; hemoglobin, 12.4 gms.; serum protein, 7 gms./100 cc.; blood urea nitrogen, 52 mgms. per cent; hematocrit, 37; blood sugar, 100 mgms. per cent; carbon dioxide combining power, 34 volumes/100. Urine analysis showed 2-plus albumin; specific gravity, 1.015; and the microscope revealed occasional red and white blood cells.

COURSE IN HOSPITAL

A Levine tube was passed into the stomach, intravenous 5 per cent glucose solution was administered and the patient was then taken to the operating-room.

The patient was anesthetized with intravenous sodium pentothal combined with endotracheal nitrous oxide and oxygen. After routine preparation of the field, the abdomen was opened through a long left rectus incision. The peritoneal cavity contained a liter of feculent-smelling murky fluid. A gangrenous volvulus of the sigmoid colon was present which was rotated 720 degrees about the mesentery. At scattered areas along the involved colon were plaques of thick organized exudate. Carefully and gently the colon was detorted.

The colon, distal to the torsion, was larger in caliber than that proximal to it. An obstructive resection was performed using a Rankin clamp inserted through a left McBurney incision. The gangrenous colon was resected by cautery between clamps without decompression. The abdominal wound was closed with through-and-through sutures of stainless steel wire.

During the procedure, the patient received one transfusion of 500 cc. of whole blood and 100 mg. of aureomycin added to the intravenous 5 per cent glucose. The patient left the operating table in good condition; pulse 128, blood pressure 120 systolic, 78 diastolic, and respirations 24.

The post-operative course was uneventful. For the first 4 days nutrition was maintained by continuous intravenous alimentation, which included 5 per cent glucose solution, physiologic saline solution, casein hydrolysates (Amigen), potassium chloride, and desiccated crystalline B vitamins (Solu-B with Vitamin C). Antibiotic therapy consisted of 100 mg. of aureomycin administered intravenously every 6 hours for 4 days. Liquid diet was given on the 5th day and non-residue diet on the 6th.

The Rankin clamp was removed at the end of 48 hours and a spur-crushing clamp was applied. The first bowel movement occurred through the colostomy 7 days post-operatively. Because of a short, taut, retracted, distal barrel no movement occurred per rectum.

The rectus wound healed per primum and the patient was discharged on the 18th hospital day with a well-functioning double-barrelled colostomy.

(S. P. #76453) *Gross*: Specimen consists of a large dilated green loop of colon measuring 62 cm. in length and 11 cm. in diameter. The serosal surface is infected, a green color, and contains scattered areas of plastic exudate. The wall is distended and thin. The lumen is markedly dilated and contains gas and greenish fecal matter.



FIG. 1. Loop of sigmoid outlined by artist on the abdominal roentgenograph taken in the supine position

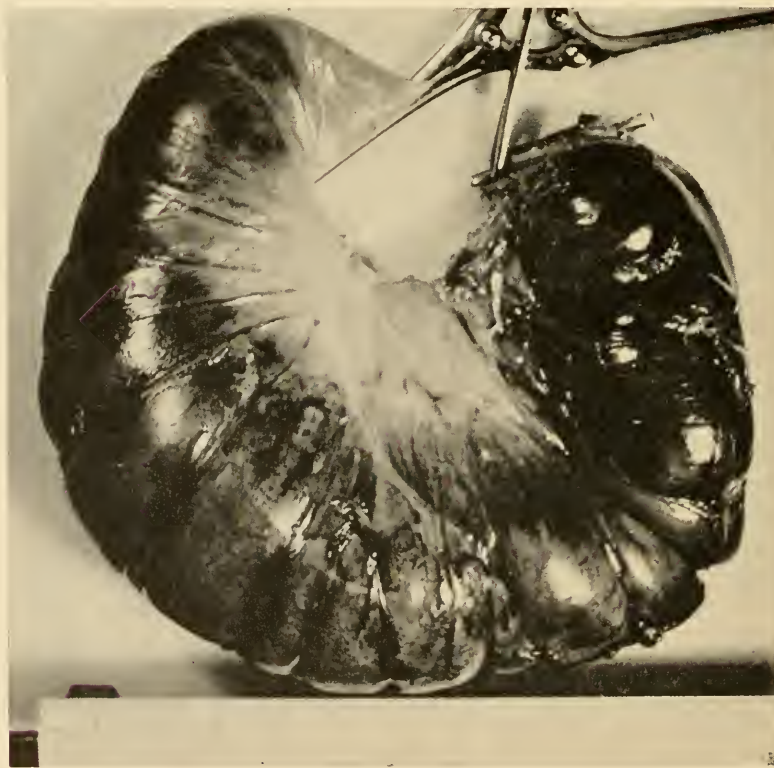


FIG. 2 The resected gangrenous sigmoid removed at operation

No gross blood is seen in the specimen. The mesentery appears thickened and edematous. Normal-appearing colon is found for about 3 cm. proximally and distally to the involved loop.

Microscopic: These sections consist of bowel wall and mesentery. The mucosa is flattened and necrotic. There is coagulation necrosis throughout the entire wall. Leucocytes, lymphocytes and erythrocytes are numerous, particularly in the muscularis. Mesentery appears edematous and contains many inflammatory cells. The mesenteric vessels, both arteries and veins, contain blood clots. Gangrene of colon.

Eight weeks after the performance of the obstructive resection, the patient was readmitted for closure of the colostomy. After adequate preparation, the continuity of the intestinal tract was restored by an open end-to-end anastomosis performed through the left McBurney incision. The patient stood the procedure well, the wound healed per primum and she was discharged 11 days after operation.

Subsequent follow-up reveals the patient doing fine and for the first time in her life, she is having regular daily bowel movements.

COMMENTS

Sigmoid volvulus is an uncommon cause of intestinal obstruction in this country, with an incidence varying from 1 to 4 per cent. It is more common in males than females. Though isolated reports record its occurrence at any age, it is much more frequent after the fifth decade. To occur during pregnancy is a rarity.

Though etiologically such factors as diet, tumors, constipation, megacolon, inflammatory reaction with adhesions and scarring are frequently discussed, the most consistent finding is a redundant sigmoid colon which may be congenital or acquired.

When torsion of the sigmoid does occur, the twist of the mesenteric base, together with the axial rotation of the bowel, produces a closed loop obstruction. Because of the thick walls of the left colon, distention can become extreme before causing perforation.

Diagnosis is made by the history and the clinical aspects of extreme distention. Roentgenography of the abdomen is usually confirmatory.

Various forms of treatment have been suggested. Non-operative decompression by use of the sigmoidoscope and tubes may be successful, if the diagnosis is made quickly and the instrumentation done with dispatch. This treatment may tide the patient over the acute phase and for some weeks to follow. Since the condition is prone to recur, however, the patient should be advised to have the redundant colon resected as soon as practicable. Pool (2) suggests an interval of 6 to 12 weeks before resection, in order for all inflammatory reaction to subside.

If the sigmoidoscopic attempts at decompression fail, the abdomen should be opened. In case of existing pregnancy, without gangrene of the loop, it may be decompressed by an aspirating needle, detorted, and a rubber tube inserted into the ascending colon, by the Witzel technique, as reported by O'Malley. Then, at an elective date after delivery, the affected bowel may be removed. It is well to remember in aspirating a distended colon, that no sutures should be inserted, such as a purse string, until the bowel is collapsed. Otherwise, the parietes may be contaminated before aspiration can be properly effected.

If the bowel is gangrenous, it must be resected. The operator may decompress the bowel first by needle, if desired. An obstructive resection is advised in this instance.

Primary resection with end-to-end anastomosis has been reported as well as exteriorization and plastic procedures in cases of volvulus, generally. If, however, the volvulus complicating pregnancy is diagnosed early, it would seem that the problem is to relieve the obstruction, empty the uterus and perform the definitive surgery at an elective date. If the diagnosis is late and the bowel not viable, resection is obligatory.

SUMMARY

A case report of gangrenous volvulus of the sigmoid colon occurring in a woman of 40 years during the last trimester of pregnancy is presented. There was a successful outcome for both mother and child.

BIBLIOGRAPHY

1. O'MALLEY, ROBERT D.: Volvulus and pregnancy, *The New England Journal of Medicine*. **246**: 744, 1952.
2. POOL, R. M. AND DUNAVANT, W. D.: Volvulus of the sigmoid colon, *Ann. Surg.* **133**: 719, 1951.

SPONTANEOUS RETROPERITONEAL HEMORRHAGE*†

LOUIS SACHS, M.D. AND ALLAN H. MACHT, M.D.

Hemorrhage into the retroperitoneal spaces may follow trauma to organs or tissues therein or may occur without any evidence of prior injury. Usually there are etiologic factors involved in cases of non-traumatic origin. Certain cases, however, occur without previous trauma or other demonstrable pathologic predisposition to account for such hemorrhage. It is a rare clinical entity which may be trivial, ending in quick recovery or may even lead to death. The case presented here is one of retroperitoneal hemorrhage without known cause, complicated by intestinal obstruction.

CASE REPORT

W. S. #83829 Sinai Hospital, male, white, age 58, farmer, admitted May 22nd 1951.

The patient's history and family history are irrelevant. His present illness began May 11th with generalized abdominal pain, nausea and vomiting. Forty eight hours later he was admitted to Frederick Memorial Hospital. His abdominal pain became intense and more diffuse. There was no history of trauma.

A physical examination revealed an acutely ill white male complaining of abdominal pain. On inspection, his abdomen was slightly distended. Abdominal palpation revealed diffuse tenderness and spasticity over the right lower quadrant. There was rebound tenderness present in this area. A right complete indirect inguinal hernia was easily reducible. The rest of the physical examination was completely negative.

The patient was taken to the operating room that night with a diagnosis of acute appendicitis. When the peritoneum was opened, there was subserosal ecchymosis of the right parietal peritoneum. The cecum and ascending colon were not involved. The appendix itself was not remarkable. On reflecting the peritoneum from the right iliac fossa, free blood was seen welling up from this area. The bleeding could not be controlled and the retroperitoneal space lateral to and behind the cecum was packed with gauze. The drains were then brought out through the McBurney type incision.

Postoperatively the patient's hemoglobin was 61 per cent, his red blood cells 3,900,000, the hematocrit 30. In the succeeding 9 days, he received 2500 cc. of whole blood. The hematocrit reading gradually rose to 48. The patient developed an ileus postoperatively which was treated by Wangensteen suction through a Levine tube, intravenous fluids and enemata. He complained of epigastric pains continually. When the Levine tube was removed his distention and vomiting recurred, requiring the reintroduction of the tube and suction. A roentgen-ray examination with barium swallow revealed complete obstruction of the second portion of the duodenum by a mass, apparently extrinsic.

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The patient was then transferred to the Sinai Hospital. A physical examination showed an uncomfortable male, expectorating bile stained clear fluid. His abdomen was moderately distended. There was a recent healed McBurney scar present. On palpation there was a large mass occupying most of the right side of the abdomen. The iliac fossa was free. The mass was moderately movable but fixed posteriorly. The patient was hydrated and taken to the operating room on the next day. A large retroperitoneal mass was found occupying the space between the leaves of the mesentery. This mass extended upward completely obstructing the second portion of the duodenum, and also downward to the right iliac fossa, thence almost completely across the abdomen. The mass, consisting of free blood and blood clot, was incised, biopsied and partially emptied of clots. There was marked active bleeding which had to be controlled by compression sutures. An anterior gastrojejunostomy was performed to relieve the obstruction.

Postoperatively, the patient developed femoral phlebothrombosis, bilateral. This was treated with bilateral femoral vein ligation and division. The gastrojejunostomy functioned well. The mass became gradually smaller. The patient was discharged from the hospital on June 18th, three weeks and five days after the gastrojejunostomy. At the time of discharge, the mass was much smaller but could still be palpated to the right of the midline.

DISCUSSION

While this case gives no evidence of any trauma or underlying disease process causing the retroperitoneal hemorrhage, there are many conditions which have been incriminated in this entity. Retroperitoneal hemorrhage can be classified (1, 2) etiologically as follows:

1. Traumatic:

A. Nonoperative

1. Direct injury to the kidneys, muscles, blood vessels and other retroperitoneal structures.
2. Fractures of the ribs, vertebra and pelvis.

B. Operative

1. Secondary to any operative procedure on the retroperitoneal tissue or bones.

2. Nontraumatic:

- A. Disease of the kidneys; calculi, cysts, tumors, infections and injury to their blood supply.
- B. Disease of the blood: Leukemia, hemophilia, thrombocytopenia, etc.
- C. Diseases of the retroperitoneal blood vessels: Aneurysm, spontaneous ruptures of the vessels associated with arteriosclerosis, hypertension or lues.
- D. Disease of the retroperitoneal tissue: Neoplasm, infections, or those following embolic or thrombotic phenomenon.
- E. Associated with pregnancy usually following intercourse or bowel movements in the last trimester.
- F. Disease of the liver: Cirrhosis.
- G. No demonstrable pathologic condition evident.

Signs and symptoms of retroperitoneal hemorrhage depend on many factors. One of the most important is the size and location of the hemorrhage. Usually the patient gives a history of a sudden pain in the abdomen, back, flanks or thigh. Depending on the amount of bleeding and its rapidity, these symptoms are followed by manifestations of shock in varying degrees. A diagnosis of massive intraperitoneal hemorrhage or rupture of a hollow viscus is often made in this condition. With a history of antecedent trauma, ruptured liver or spleen may be the diagnosis. However, if the hemorrhage is small or localized to the particular area, the symptoms may not be alarming and signs may appear slowly. There may be tenderness and rigidity of only that portion of the abdomen overlying the mass. It can simulate an acute gall bladder or an acute or ruptured appendix. Ecchymosis may appear in the flanks or on the abdominal wall in a few days. A mass may become palpable. One of the most constant complications is early paralytic ileus. This is quite refractory to treatment. On roentgen examination the ileus is usually evident and a retroperitoneal mass may be visualized. Excepting when massive hemorrhage occurs, laboratory findings are of no diagnostic value early in this condition. Later an anemia will develop depending on the amount of hemorrhage.

After the immediate danger of death through exsanguination has passed, paralytic ileus as a complication is a serious one and should be treated as such.

The actual mechanism of this ileus is not fully understood. Grubal and Cunnot (3) in 1933 proved that blood in the retroperitoneal space was an irritant causing nausea, vomiting and ileus. Cole (4) observed that these patients often have signs and symptoms of peritonitis. He thought it resulted from a central nervous system reflex caused by irritation of the sympathetic nervous system. Some believe this reflex is mediated through the splanchnic nervous system while others think that the ileus is caused by a paralysis of both the sympathetic and parasympathetic system. The latter theory seems the most logical and can be supported experimentally. Assuming that the confined hemorrhage in the retroperitoneal tissues caused irritation and paralysis of both the sympathetic and parasympathetic nervous systems unselectively, Kuntz (5) experimentally sectioned both the splanchnic and vagus nerves. This operation resulted in marked hypotonicity of peristalsis and produced an ileus.

Besides the development of an ileus, obstruction to the gastrointestinal tract can be caused by mechanical pressure. Only one other case in the literature by T. J. Illyd James (6) in 1930 showed a mechanical obstruction of the duodenum by a retroperitoneal hemorrhagic mass. That obstruction, unlike the one in this case, could be relieved by evacuation of the blood clot at operation.

SUMMARY

A case of spontaneous retroperitoneal hemorrhage is presented which was successfully treated by gastrojejunostomy and supportive therapy.

The etiologic factors in the traumatic and nontraumatic groups have been listed.

The signs and symptoms depending on the etiology and amount of hemorrhage have been reviewed.

The prognosis in any patient with retroperitoneal hemorrhage will vary and

depends on the etiology, the massiveness of the hemorrhage and complications such as intestinal obstruction. In any case, the presence of blood in the retroperitoneal tissue must be considered as a serious problem as should the associated ileus.

BIBLIOGRAPHY

1. KARABIN, J. E.: Retroperitoneal hemorrhage. *Am. J. of Surg.* **56**: 471-479, 1942.
2. NANNINI, L. D.: Spontaneous retroperitoneal hemorrhage of unknown etiology, Permanente Foundation. *Med. Bull.* **3**: 22-26, 1945.
3. GRUBAL, J. AND CUENOT, A.: Importance du sang. comme facteur d'irritation péritonéale, *Presse. Med.* **41**: 528-585, 1933.
4. COLE, WARREN H.: Retroperitoneal hemorrhage simulating acute peritonitis, *J. A. M. A.* **96**: 1472-1474, 1931.
5. KUNTZ, A.: *Anatomic Nervous System*, Philadelphia Lea & Febiger, 1934, 1-697.
6. JAMES, T. J. ILLTYD: Retroperitoneal hemorrhage, *Lancet* **2**: 1123-24, 1930.

CLINICO-PATHOLOGIC CONFERENCE

FROM THE CASE HISTORIES, UNIVERSITY HOSPITAL, BALTIMORE

Clinical History

Because of an increasing frequency of attacks of epigastric pain, a 47 year old white male was admitted to the University Hospital January 25, 1948.

Since the age of 15 progressive weakness had involved first the upper extremities and then the lower. As the muscles weakened, wasting became evident. At the age of 20 years, bilateral cataracts were removed. Testicular atrophy had been observed at this time.

For the 5 years preceding admission, he had been stricken by epigastric pain that had occurred periodically and had subsided after one and one-half hours. Four weeks before admission the attacks had appeared every 2 to 4 days and each had endured for 1 to 3 days.

On admission the pain was described as one radiating along the costal margins, into the sternal area, to the back, and rarely to the shoulder. There was no report of jaundice, pruritus, diarrhea or abnormal miction. Several black stools had been passed a few months before admission. The epigastric pain had not been allayed by rest or various home remedies. Exertion, was seemingly, unrelated to the attacks.

On admission to the hospital, the examiner saw the patient as a chronically ill, 47 year old white male of effeminate physique. Although cooperative, his facial expression was apathetic. His outward aspect was certainly not one of an acutely dismayed patient. His respiratory rate, blood pressure, pulse rate and temperature were normal. Obvious weakness and wasting of the skeletal muscles, though generalized, were more apparent in the shoulder girdle and hands. All reflex actions in the extremities were weakened, but modally normal. Sensory perceptions were also normal. Aphakia and the scars of iridectomy were noted of both eyes. The lenticular capsules were cloudy. The abdomen, with the exception of minimal tenderness in the epigastric region, was normal.

In this case, the laboratory data were not helpful. The hemogram, erythrocyte sedimentation rate, urinalysis, phenolsulphonphthalein retention test, stool examination, serologic test for syphilis, tuberculin test, serum amylase, blood urea nitrogen, blood sugar, glucose tolerance test, protein and albumin-globulin ratio, thymol turbidity, and prothrombin time were all normal.

Desiccated thyroid given for a hypometabolic rate of 23 was ineffective. A subsequent determination showed his metabolism to be unchanged. An electrocardiogram indicated myocardial abnormality, but not infarction. Stones in the gallbladder were demonstrated, but the patient rejected surgery for their removal. A gastrointestinal series was normal. Although unimproved, the patient left the hospital February 12

At 10:00 A.M. on the morning of March 16, he was awakened by sharp, lancinating, localized epigastric pain. It was not alleviated by a hypodermically administered drug. At 6 o'clock the same evening, he was brought to the hospital, where, he appeared acutely distressed even though his temperature, pulse and respiratory rates

were normal. Physical methods showed his pulmonary and cardiovascular organs to be functioning properly. In the epigastrium, a pear-shaped area of redness was discovered which marked the center of abdominal tenderness and rigidity.

Upon rebound of the abdominal wall, pain was experienced in the same area. Peristaltic sounds were heard. The upper abdomen was tympanitic. There was no "shifting dullness" or palpable masses. At that time a count of blood leukocytes was 16,500 per cubic millimeter. Eighty-five per cent were neutrophilic granulocytes.

The pain, which led to this final admission, persisted unabated except for temporary relief afforded by morphine. At 2:45 A.M. on March 17 the patient developed shock and dyspnea which necessitated the administration of oxygen and pressor drugs. There was no evidence of hidden bleeding. Tympany was elicited in the upper abdo-



FIG. 1



FIG. 2

FIG. 1. Shows essentially normal abdomen (flat plate)

FIG. 2. Spot film of right upper portion of abdomen showing outline of gallstones

men. There was no rigidity. Eighteen hours later signs of pulmonary edema, cyanosis and hyperpyrexia appeared. At this time, rigidity of the upper abdominal muscles was definite. Still in a state of shock, signs of abdominal catastrophe became more pronounced and death ensued.

Clinical Discussion

Dr. C. R. Edwards: In this patient, we recognize one who because of a chronic neurologic and metabolic affliction is able to respond only feebly to an acute disease.

The historian in this case has well noted the radiation and recurrence of the abdominal pain. The pain, we are told, never radiated directly to the shoulder, but into the lower scapular region. Another characteristic of the pain is its spontaneous termi-

nation in each attack. This suggests a mechanical cause as is seen in a hernia where a viscus slips into a small channel, there to be pinched. In this circumstance, the pain would abate as the viscus returns to normal position. There probably would not be a spontaneous, abrupt, intermission of pain in lithiasis of the cholecystic duct or ureter. In either case, pain would be excruciating and writhing.

Have we roentgenographs of the first admission?

Dr. J. T. Brackin: This film of the abdomen shows round shadows of calcification interpreted as gallstones. The roentgenogram of the skull illustrates hyperostosis frontalis and calcareous deposits in the choroid plexuses. The roentgenographic findings in the stomach, duodenum and small intestines were normal.

Dr. Edwards: From the roentgen ray examination at the first admission, we learn that stones are in the gallbladder. When admitted for the second time the patient had a pear-shaped area of redness in the epigastrium and tenderness and rigidity in all of the upper abdomen. This area of redness might mean that there has been fixation of an infected viscus to the parietal peritoneum from whence an inflammatory process extended through the abdominal wall. This hypothesis is deserted because of the brevity of this man's latest illness. The area of hyperemia could be the result of erysipeloid infection, and not related to the malady which proved fatal to this patient. Occasionally, though, pancreatic inflammation causes discoloration or even hemorrhage of the abdominal wall. The tympany in the upper abdomen indicates paralytic ileus. The leukocyte count mounted to 16,500 per cubic millimeter at this time.

Senior Student: In my opinion, there is a distinct possibility that a stone impacted at the ampulla of Vater, caused a reflux of bile into the pancreatic duct, and resulted in acute pancreatitis.

Senior Student: Is there a possibility that the gallstones ruptured into the gastrointestinal tract?

Dr. Edwards: Yes, but before gallstones get into the intestinal tract, a period of days or weeks, or more frequently months, will pass during which time an inflammatory reaction adheres the gallbladder to the small bowel and leads to perforation and fistula formation.

The history in this case of sharp, spontaneously interrupted abdominal pain, stones in a poorly functioning gallbladder, the absence of shock, and the development of abdominal rigidity is merely allusive of pancreatitis. Nevertheless, I do not believe, because the attacks were too quickly terminated, that the episodal pains reported here were the result of pancreatic disease. One usually expects pancreatitis to resolve itself gradually if at all, especially if pancreatic enzymes have been released to affect retroperitoneal tissues.

The repetitiousness of this patient's sickness suggests a biliary stone acting in a ball-valve manner. I think that the stone finally perforated the gallbladder or the common duct.

Pathologic Discussion

Dr. Hugh R. Spencer: This person since the age of 15 had the muscular atrophy and atonia of dystrophia myotonica. His final illness and death apparently had no direct

relationship to this chronic disease. Dystrophia myotonica is a hereditary disease of the third and fourth decades, often appearing in members of the same family. The muscular atrophy usually affects the forearm, the brachioradialis, the peroneal and the quadriceps groups. The facial muscles are often involved. The wasting is commonly symmetrical. Early development of cataracts and atrophic changes in the testes or ovaries, the hypophysis and adrenal cortex occur.

The character of this man's final illness and death was quite apparent. The peritoneal cavity contained a small amount of serosanguineous fluid. The pancreas was large, firm and deeply hemorrhagic. Many small flattened creamy yellow areas of fat necrosis were seen involving the fat of the omentum, mesentery, and retroperitoneum. The common bile duct was patent. The papilla of Vater was clearly defined. The gallbladder contained a small amount of bile and twelve slightly faceted gallstones.

The final diagnosis was: **Chronic cholecystitis; cholelithiasis; acute hemorrhagic pancreatitis; fat necrosis, mesentery, omentum and retroperitoneal fat; atrophy with fatty changes of pectoral muscles and muscles of upper extremities, bilateral; persistence of thymus gland.**

OBSTETRICAL CASE REPORT*

M. W., a 26 year old para 3-0-0-3, was admitted to the hospital at 10:30 P.M. in early first stage labor. Her past and family histories were non-contributory, her previous pregnancies and labors had been normal and the present pregnancy without incident. Upon admission the general physical examination was negative. Abdominal palpation and a rectal examination showed evidence of a breech presentation with a knee in the vagina. The cervix was 3 cms. dilated and the membranes intact. Fetal heart sounds were heard in the left lower quadrant, strong and regular. Pains at this time were about 10 minutes apart and not very severe. About 2:00 A.M. the membranes ruptured spontaneously and the pains became harder and more frequent. At 3:15 A.M. a hand was discovered to be protruding from the vagina and a repeat palpation and sterile vaginal examination confirmed the diagnosis of a transverse lie. The fetal heart was still strong and regular. The cervix was 8 cms. dilated. The uterus appeared to be tightly clamped around the baby.

Treatment?

Discussion

In recent years there has been an increasing tendency to treat the late transverse lie by abdominal delivery rather than by the older method of internal podalic version and breech extraction. The results obtained by a number of operators would seem to bear out the correctness of this policy. Both fetal and maternal mortality and morbidity are decreased.

In this particular case a laparotrachelotomy was done and a full term living infant delivered. The mother made an uneventful recovery.

However the conduct of this case is far from ideal, there being 3 distinct lacks which are open to major criticism. First, the diagnosis of transverse lie should have been made during pregnancy at one of the regular prenatal visits. Having been made, the patient should have been followed carefully and when near term as indicated by the "ripeness" of the cervix, she should have been admitted to the hospital. Here after preparation, an easy external cephalic version could have been done and while the head was held firmly over the inlet by an assistant, the membranes could be ruptured. And, if necessary, a scalp clamp could be applied to hold the head in position until labor began or the head was firmly engaged. Normal labor should ensue.

The second error was failure to make a diagnosis of the presentation at the time of admission. There seems little doubt in retrospect that the "knee" in the vagina was in reality an elbow. Abdominal palpation must have been quite sketchy. After labor begins external version is not as easy as before labor, but is possible in a high percentage of cases and should be attempted. If successful, further treatment would be as outlined above. Failing external version, early abdominal delivery will give much better results than when it is delayed.

The third major mistake is also quite evident. This patient's membranes ruptured and she was not examined until one hour and 15 minutes later when a hand protruded from the vagina.

Can this possibly be a real and not a hypothetical case? Unfortunately it is.

* From the Department of Obstetrics, University of Maryland School of Medicine, Baltimore.

BOOK REVIEWS

A Method of Anatomy. *J. C. Boileau Grant, Professor of Anatomy in the University of Toronto, 5th edition, Baltimore: The Williams & Wilkins Co. 870 pp., 1952, \$7.00*

For more than 15 years medical students and instructors alike have found this to be a concise, understandable and most helpful text. It represents a distinct departure from the style of the larger standard textbooks of anatomy; that is, it is not simply an encyclopedia of human anatomy. Rather, in its regional consideration of the body, a predominant or "key" structure of each region is selected and its important relationships to other structures are emphasized. Such correlation leads to an appreciation of underlying principles. The student is taught to reason anatomically and this makes the learning of new and related facts an easier task. The illustrations, all line drawings, are simple, even diagrammatic in nature; yet they are accurate, being based upon a large number of careful dissections.

In this 5th edition Doctor Grant has clarified, rearranged, and shortened various parts of the text and has made certain deletions. The volume of the text is not increased. The new material includes references to the retinacular or link ligaments of the interphalangeal joints, to radiograms of the wrist as a guide to skeletal age, to the nerve supply to various joints, to the ischium-pubis index as an aid to determining the sex of a given pelvis, to the cardinal ligaments, to the pancreatic ducts, to the structure of the anal canal, to the movements of the foot, to the moderator band, to the numbering of the broncho-pulmonary segments, to the mechanism of swallowing and the movements of the epiglottis, and to the lateral pharyngeal space. Seventy-eight new illustrations have been added and 69 of the old ones have been redrawn, relabeled, or otherwise improved. Students of anatomy find that principles, details, and relationships learned by Grant's "Method" are easily retained. The book achieves its aim of being "a working instrument designed to make anatomy rational, interesting and of direct application to the problems of medicine and surgery."

Vernon E. Krah, Ph.D.

The Scalp in Health and Disease, *Howard T. Behrman, A.B., M.D., The C. V. Mosby Company, St. Louis. 566 pages, 312 illustrations \$12.50.*

Dr. Behrman has compiled an excellent modern treatise on the diagnosis and treatment of diseases of the human scalp and hair. It should prove of great value to the post-graduate student in dermatology, primarily because of the complete bibliography which follows each chapter; and the general practitioner may use this text as a reference when the need arises. As stated by Dr. Sulzberger in the foreword, the experienced dermatologist will not agree with some of the statements made by Dr. Behrman, but everyone is entitled to a difference of opinion. In spite of this, it is quite obvious that much time and effort went into the preparation of this compendium.

The illustrations are generally good, but this reviewer does take exception to the Illustrations 157-159 of alopecia areata and alopecia totalis as caused by congenital syphilis. These statements would be very hard to substantiate. If syphilis causes such lesions they must be extremely rare.

The chapters on fungus infections of the scalp and hair are excellent, particularly the common sense view taken by the author in regards to local medication. It is thoroughly agreed that the onset of puberty does not cure the disease. The section devoted to roentgen-ray epilation is complete in every respect and should be read by every practicing dermatologist as well as by students.

This book should serve as a stimulus to those interested in investigative work in dermatology, particularly with reference to diseases of the hair.

HARRY M. ROBINSON, JR., M.D.

MEDICAL SCHOOL SECTION

UNIVERSITY TV PROGRAM ON NATIONAL NETWORK

LIVE AND HELP LIVE ON NBC-TV APRIL 26, 1953

The public service program of the School of Medicine, "Live and Help Live" has been selected for a guest presentation on the program "American Inventory" sponsored by the Sloan Foundation and telecast weekly over some 21 stations of the National Broadcasting Company television network.

A program of the University television series entitled "Cardiology and Radiology" will be presented from Baltimore over the nation-wide hook-up from **2:00 to 2:30 P.M. on Sunday, April 26, 1953.** The program will be produced and moderated by the producer of "Live and Help Live", Mrs. Anne Holland, and will include presentations by Dr. William S. Love of the Department of Cardiology and Dr. Donald Barnett of the Department of Radiology. Dr. Leonard Scherlis will assist Dr. Love in the demonstration. Much of the work will include demonstrations on the new image amplifier now under development by Westinghouse Corporation and will originate in part from the Westinghouse Plant in Baltimore. This is the first national telecasting of portions of the University program.

MEDICAL LIBRARY NOTES

Between November 1, 1952 and January 31, 1953, gifts of books and journals were presented to the library by the following donors:

Dr. S. L. Bonting	Dr. Enrique Llamas
Dr. H. A. B. Dunning	Dr. R. D. Mudd
Dr. G. E. Gibbs	Dr. R. T. Parker
Dr. F. W. Hachtel	Dr. M. C. Pincoffs
Dr. S. M. Jacobson	Dr. M. S. Sacks
Dr. J. C. Krantz, Jr.	Dr. J. E. Savage
Dr. A. M. Krause	Dr. A. C. Smoot, Jr.

Dr. H. Boyd Wylie

* * *

The Crawford Collection of the Medical Library—about 500 medical volumes originally belonging to Dr. John Crawford of the early medical school faculty (before 1813)—is one of our finest bibliographic treasures. It is of special interest that the library has acquired one of John Crawford's own writings, previously lacking:

Crawford, John. *A Lecture, Introductory to a Course of Lectures on the Cause, Seat and Cure of Disease.* Baltimore, Published by Edward J. Coale, 1811.

Dr. Adair Crawford, brother of John, was also well known as a scientific writer of his day. The following book is another recent addition to our Crawford Collection:

Crawford, Adair. *Experiments and Observations on Animal Heat, and the Inflammation of Combustible Bodies.* London, Published by J. Johnson, 1788.

It is gratifying to observe the interest which other libraries show in the BULLETIN OF THE SCHOOL OF MEDICINE. Numerous comments have come from medical librarians in various parts of the country to indicate that the BULLETIN in its new, improved form has a place on their shelves.

APPOINTED EDITORIAL CONSULTANT

Dr. Henry J. L. Marriott, Assistant Professor of Medicine at the School of Medicine, was recently named Consultant to the Editorial Department of the Williams & Wilkins Company, medical publishers. Dr. Marriott is the author of a recent popular book entitled "Medical Milestones."

DEPARTMENT OF ORTHOPEDIC SURGERY

Dr. Allen F. Voshell, Professor of Orthopedic Surgery, attended the meetings of the Certification Board of the Academy of Orthopedic Surgeons in January. Dr. Voshell participated in the examination of candidates for certification in orthopedic surgery and in the general program of the Academy. Dr. Voshell was President of the American Board of Orthopedic Surgery from 1949 to 1951.

Dr. Robert Abrams, Assistant in Orthopedic Surgery, recently attended the meeting of the Academy of Orthopedic Surgeons.

Dr. Milton J. Wilder, Assistant Professor of Orthopedic Surgery, recently attended the meeting of the Southern Medical Association in Miami, Florida.

Dr. John J. Tansey, recently Resident in Orthopedic Surgery at the Baltimore City Hospitals, University and Kernan Hospitals, has now entered practice in Baltimore.

Dr. James P. Miller, Instructor in Orthopedic Surgery, attended the meeting of the Academy of Orthopedic Surgeons and received a certificate of membership having been elected to this group in 1952.

Dr. Allen F. Voshell presented two papers before the Cancer Section of the American College of Surgeons at a meeting held in Puerto Rico late in February, 1953.

MERGER NOTED

New Journal Appears

The creation of the Albert Einstein Medical Center, a consolidation of the Jewish, Mt. Sinai and Northern Liberties Hospitals in Philadelphia, Pennsylvania has been recently announced.

A new journal entitled "The Journal of the Albert Einstein Medical Center" has appeared, replacing publications formerly issued by the above named institutions.

REPRINT RELATING TO MEDICAL WRITING AVAILABLE

American Medical Writers' Association Reprints Symposium in Medical Writing Held at Annual Meeting

A reprint from the January number of the Mississippi Valley Medical Journal, a 24 page summary of the papers read at the 1952 meeting of the American Medical Writers' Association is available for all those interested in medical writing, according to Dr. Harold Swanberg, Secretary of the Association.

The reprint, which will be distributed free to those applying for it, is being offered by the American Medical Writers' Association as a part of its policy of improving the written word of medicine.

A sample copy of the reprint is available in the Bulletin Office for inspection. Those desiring reprints of these interesting papers should apply directly to Dr. Harold Swanberg, 209-224 W. C. U. Building, Quincy, Illinois.

GRANT ANNOUNCED

Department of Neurologic Surgery Benefits by Donation

Recent announcements by the Board of Regents of the University and the Dean of the School of Medicine have acknowledged the donation by Mr. Donaldson Brown of better than \$17,127 for work in neurosurgery.

DEPARTMENT OF UROLOGY

Dr. Joseph H. Menning has recently been appointed Instructor in Urology at the School of Medicine. Dr. Menning will be actively engaged in the teaching of urology at the Mercy Hospital.

DEPARTMENT OF SURGERY

Dr. E. Roderick Shipley recently presented a paper entitled "Acute Peritonitis" at a Symposium on Acute Infectious Diseases presented under the auspices of the American Academy of General Practice and the Lederle Laboratories Division of the American Cyanamid Company at Little Rock, Arkansas.

DEPARTMENT OF MEDICINE

Dr. Robert Parker recently presented a paper entitled "Tularemia in the Southeastern United States", the paper being presented at a Symposium on Acute Infectious Diseases presented under the joint auspices of the American Academy of General Practice and the Lederle Laboratories Division of the American Cyanamid Company at Little Rock, Arkansas.

MARYLAND SOCIETY FOR MEDICAL RESEARCH CONTINUES ACTIVITIES

Despite the overwhelming opposition by the voters in Baltimore City for a referendum prohibiting medical research, anti-medical research activities continue. Therefore the Maryland Society for Medical Research has found it necessary to further the maintenance of a high level of educational activity in behalf of medical research. The Society publishes a regular Bulletin and has prepared several educational films for showing to the laity. The Society has sponsored numerous speakers to high school and lay audiences and as well, has conducted numerous tours of scientific institutions throughout the City of Baltimore.

The Maryland Society for Medical Research is the state chapter of a national organization dedicated to sponsoring and furthering medical research through animal experimentation. Physicians in Baltimore may obtain further information by contacting Dr. Dietrich C. Smith, 29 South Greene Street, Baltimore, who is currently

secretary of the Society. Physicians in other cities may consult their local representatives for further information.

JACK W. COLSON MEMORIAL LECTURE

Dr. George W. Thorn to Speak

The annual Jack W. Colson Memorial Lecture sponsored by the Sinai Hospital House Staff will feature Dr. George W. Thorn, Professor of Medicine at Harvard University. Dr. Thorn will speak on "Studies on the Adrenal Cortex." The annual lectureship in memory of the late Dr. Colson will be held on April 17, 1953 at 8:30 P.M. in the Hurd Hall of the Johns Hopkins Hospital. Members of the Faculty and all interested in the subject are cordially invited.

DEPARTMENT OF GYNECOLOGY

On February 17, 1953, the Gynecological and Obstetrical Departments entertained the Southern Gynecological and Obstetrical Society. A diversified program was presented to the forty physicians attending, most of them from the Southern States.

The program began in the morning with operative clinics. This was followed by an informal session concerning the physical aspects of radiation techniques, urinary estrogen determinations, and the problem of carcinoma in pregnancy. Luncheon was then served in the hospital dining room. The afternoon session concerned principally problems relating to obstetrics.

DEPARTMENT OF PHARMACOLOGY

Mr. Johnson S. L. Ling has recently been awarded a Research Fellowship in the American Heart Association for the year 1953-54. Mr. Ling will conduct researches in the field of cardiovascular pharmacology.

Mr. Leonard S. Brahen has been awarded a United States Public Health Service Research Fellowship by the National Heart Institute for the coming year.

Dr. John C. Krantz, Jr., Professor of Pharmacology, spoke at the annual dinner of the School of Medical Sciences, University of South Dakota on March 28, 1953.

MERCY HOSPITAL SECTION

A reorganization in the undergraduate teaching of medicine at Mercy Hospital took place this year under the direction of Dr. Maurice C. Pincoffs. During the first semester Dr. Pincoffs acted as consultant with Drs. E. T. Lisansky and Richard A. Carey being in charge of the medical ward services. Beginning with the second semester, Dr. H. Raymond Peters, Chief of Medicine at Mercy Hospital, became consultant with Drs. Theodore Woodward and Henry J. Marriott being in charge of the medical ward services.

New Diplomates

Dr. James J. Nolan was recently certified in Internal Medicine by the American Board of Internal Medicine. Dr. Michael L. DeVincentis became a diplomate of the American Board of Surgery.

New Appointments

Dr. William H. Grenzer and Dr. Joseph H. Menning were recently appointed to the Mercy Hospital Visiting Staff.

Dr. August Kiel, Jr. recently joined the Mercy House Staff as Resident in Neurologic Surgery for the six month period expiring June 30, 1953.

Attend Pan-American Medical Association Congress

Dr. and Mrs. Edward F. Kitlowski, Dr. and Mrs. Theodore A. Schwartz and Dr. and Mrs. Francis Ellis attended the Pan-American Medical Association Floating Congress on the steamship "Nieu Amsterdam" of the Holland-American Lines.

Ladies' Auxiliary

Recent nominations by the Auxiliary have resulted in the election of Mrs. Earl Chambers as President, Mrs. A. Gordon Armstrong as First Vice-President, Mrs. Daniel J. Pessagno, Second Vice-President, Mrs. Leo J. Vollmer, Corresponding Secretary, Mrs. John F. Schaefer, Recording Secretary, Mrs. Joseph Fusco, Treasurer, and Mrs. Joseph J. Jerardi to the Board of Directors.

Affiliation for Record Librarians

An affiliation agreement with the United States Public Health Service Hospital in Baltimore has recently been effected covering Medical Record Library Science relative to obstetrics, gynecology and pediatrics. Medical Record Library students will spend a certain amount of time at the Public Health Service Hospital as a part of their regular course.

Resident House Staff Appointments, July 1, 1953 to June 30, 1954

SURGERY.....Resident—July 1, 1953–December 31, 1953

Dr. William B. Rever, Jr., Administrative

Resident—July 1, 1953–December 31, 1953

Dr. Leonard G. Hamberry

Resident—January 1, 1954–June 30, 1954

Dr. Leonard G. Hamberry, Administrative

Resident—January 1, 1954–June 30, 1954

Dr. William B. Rever, Jr.

Senior Assistant Residents in Surgery

Dr. Frank A. Theuerkauf, Jr.

Dr. Robert A. Moore

Junior Assistant Residents in Surgery

Dr. F. M. Prezioso

Dr. Ira B. Anderson

THORACIC SURGERY.....Resident—Dr. Calvin Y. Hadidian

OBSTETRICS and GYNECOLOGY..Resident Gynecologist—Dr. Milagros M. Correa

	<i>Resident Obstetrician</i> —Dr. Edward M. Barczak
	<i>Assistant Residents in Obstetrics and Gynecology</i> Dr. Joseph T. Michels Dr. James M. McDonald, Jr.
MEDICINE.....	<i>Resident Physician</i> —Dr. E. Paul Coffay, Jr. <i>Senior Assistant Residents in Medicine</i> Dr. Owen B. Cassidy Dr. William G. Esmond <i>Junior Assistant Residents in Medicine</i> Dr. Jacento Gochoco Dr. Robert J. Lyden
PEDIATRICS.....	<i>Resident Pediatrician</i> —Dr. Yung-Tsing Wong <i>Assistant Resident in Pediatrics</i> Dr. Clara F. Manalo-Santamaria
DENTISTRY.....	<i>Resident</i> —Dr. Nicholas C. Garcia

SIXTH ANNUAL LUTHERAN HOSPITAL MEDICAL AND SURGICAL SYMPOSIUM

As has been customary for many years, the Medical Association of the Lutheran Hospital of Maryland will present its annual Medical and Surgical Symposium on Saturday, May 2, 1953 from 9:00 A.M. to 4:30 P.M. all sessions being held in the library of the Nurses' Home, 700 Ashburton Street in Baltimore. A varied program has been arranged by the Committee headed by Dr. Joseph C. Matchar and including Drs. John B. Rosin, Francis Grumbine and Milton Markowitz.

PROGRAM

1. Obstructive Lesions of the Gastro-Intestinal Tract. . . **Dr. C. A. Weymuller**, Professor of Pediatrics, College of Medicine, New York City.
Discussion: Dr. J. C. Handlesman.
2. Serous Cystadenocarcinoma of the Ovaries. . . . **Dr. Carl T. Javert**, Associate Professor of Obstetrics and Gynecology, New York Hospital, New York.
Discussion: Dr. J. Donald Woodruff.
3. Recent Advances in the Methods Affecting the Esophagus. . . **Dr. Howard A. Andresen**, Section on Thoracic Diseases, Department of Internal Medicine, the Mayo Clinic.
Discussion: Dr. Moses Paulson.
4. Diagnosis and Treatment of Premalignant Lesions of the Breast. . . **Dr. Murray M. Copeland**, Professor of Oncology, Georgetown University Medical Center, Washington, D. C.
Discussion: Dr. Edward F. Lewison.

Members of the medical profession, students, and members of the Baltimore Hospital House Staffs are cordially invited.

POST GRADUATE COMMITTEE SECTION

POST GRADUATE COMMITTEE, SCHOOL OF MEDICINE

HOWARD M. BUBERT, M.D., *Chairman and Director*

Elizabeth Carroll, *Executive Secretary*

Post Graduate Office: Room 600

29 South Greene Street

Baltimore 1, Maryland

TV DAY

During the summer of 1952 the Chairman and Director of this Committee conceived the idea that television could be adapted to the routine teaching of medicine to undergraduate and post graduate students. It seemed that this instrumentality might prove to be superior to any of those previously utilized for several reasons. The field to be observed might vary in size from an operating room or a laboratory to the minute one seen through a high powered microscope. Further, the viewing audience served would be limited only by the equipment available and, in addition, the procedure seen would be current and up to the minute and not subject to the rapid obsolescence of even the most recent film or model heretofore available.

Considerable consultation with officials of the Hearst Corporation; operators of Station WBAL-TV in Baltimore resulted in a decision to make the attempt and the date of January 15th, 1953, was decided upon. As has been done numerous times over a period of some years The Maryland Academy of General Practice was invited to sponsor the project and they accepted the invitation.

Dr. John Wagner of the Post graduate Committee was asked to arrange the program and, with the finest possible cooperation from members of the Medical School Faculty, he achieved signal success. The program, which is given below, was highly diversified as can be seen, and was designed to test the resources of television in adapting it to all forms of teaching requirements.

Operations were shown, microscopic slides exhibited, patients presented and panel discussions given. A broadcast from WBAL was picked up over the air in contrast to the remainder of the presentations which were of the closed circuit type originating and shown on screens within the University Hospital.

A luncheon was held at the hospital and we were delighted to have a talk by President Byrd who expressed keen interest and was high in his praise of the venture which we believe is "a first". The presence of Mrs. John L. Whitehurst, J. Milton Patterson, and Louis L. Kaplan of the Board of Regents, all of whom expressed approval of the program, was very much appreciated by the committee.

Mr. George Buck, Director of the University Hospital, was indefatigable in working with the engineering staff of WBAL-TV which was under the direction of Mr. Wilner, Chief Engineer of Hearst Corporation, and Mr. Bareham, Chief Engineer of WBAL-TV.

PROGRAM

AM		Anne J. Holland and John C. Krantz, Jr., Ph.D.
8:50 . . .	Music	
9:00 . . .	Introduction—Howard M. Bubert, M.D.	12:30 . . . "Ventriculography in the Diagnosis of Brain Tumor" Dr. Richard Coblentz and Dr. Ray- mond K. Thompson
9:01 . . .	Dr. Howard M. Bubert, Dean Wylie and Director George Buck	1:00 . . . "The Pre-Natal Patient as a Person" Dr. Louis H. Douglass, Dr. Frank Kaltreider, Dr. J. Huff Morrison and Dr. Benson C. Schwartz
9:10 . . .	"The Management of Breast Lumps" Dr. C. R. Edwards	
9:40 . . .	"The Diagnosis and Management of Superficial Fungus Infections" Dr. H. M. Robinson, Jr.	1:30 . . . Adjourn for lunch
10:00 . . .	Clinical Pathological Conference Dr. H. R. Spencer, Dr. T. Nelson Carey and Dr. Walter Kilby	2:25 . . . Music
10:30 . . .	Symposium on Obesity Maurice C. Pincoffs, M.D., Frank H. J. Figge, Ph.D., and Jacob E. Finesinger, M.D. Questions from the floor	2:30 . . . "Diagnosis of the Lymphocytic Forms of Meningitis" Dr. Theodore E. Woodward, Dr. Robert T. Parker and Mr. Merrill J. Snyder
11:00 . . .	"Making a Cardiac Diagnosis" Dr. William S. Love, Drs. Sidney and Leonard Scherlis and Dr. Kyle Swisher	3:00 . . . "Peripheral Vascular Diseases" Dr. George H. Yeager, Dr. Erwin Jennings and Dr. Arlie Mansberger
11:40 . . .	Five-minute intermission—Music	3:30 . . . "Radioactive Iodine and Radioactive Gold in Clinical Medicine" Dr. Robert E. Bauer and Dr. John Dennis
11:45 . . .	"The Newer Concept of Treatment of Tuberculosis in Children" Dr. A. H. Finkelstein	4:00 . . . "Clinical Presentation of a Psycho- somatic Problem" Dr. Jacob E. Finesinger
PM		4:30 . . . "Present Status of Therapy in the Leukemias" Dr. Milton S. Sacks
12:15 . . .	"How the Doctor Manages to Keep Up"	

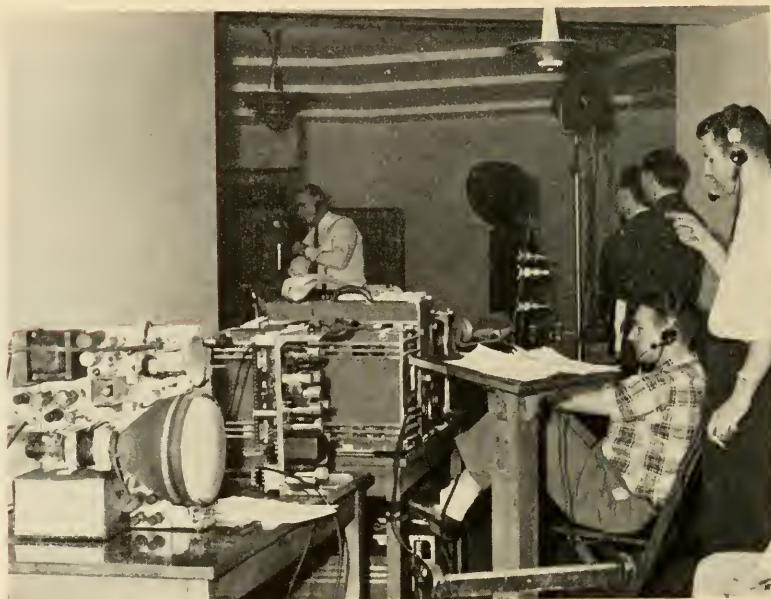


a



b

a. Television demonstrating technique of craniotomy
b. Medical audience watches TV demonstration



c. A portion of the basic equipment supplied by WBAL-TV
Director Jones holds stop-watch. Camera is seen in background

The magnitude of the contribution made by Station WBAL-TV is best understood when one considers that well over one hundred thousand dollars worth of equipment and many man hours of experienced technical assistance was required for this demonstration of the place of television in teaching. Our appreciation is also expressed to Dr. L. E. Florey of R. C. A. laboratories for making available to us their television microscope.

We believe the venture was highly successful and will attempt to repeat it on an even larger scale in the not too distant future.

McCALL AWARD

For the second year McCalls Magazine has given a series of awards to women who have made outstanding contributions to public service in the fields of radio and television. In addition, a general award has been made to the woman whose activities have, in the opinion of the judges, transcended all others during that year.

On January 8th of this year this top award was given to Anne Holland of Station WBAL-TV for her work in producing public service programs during 1952. Because the recipient is of the opinion that the University of Maryland program, presented each Tuesday evening, played a large part in her selection for this honor she wrote the following letter which deserves, in our opinion, publication.

LETTER

Doctor Howard M. Bubert
Chairman, Post Graduate Committee
University of Maryland Medical School
Greene and Lombard Streets
Baltimore, Maryland

Dear Doctor Bubert:

Now that the smoke has cleared away and things are taking on a more normal aspect following the wonderful recognition given us all by McCall's Magazine, there is one more thing that I should like to say to you and to all of the professional men and women with whom it has been my privilege to work during this past year.

The service rendered the citizens of Maryland by the professional staff at the University of Maryland has indeed been outstanding and made history. The hours that have been so generously given in the preparation of these weekly broadcasts by these men and women run into a great number. There is not a week following a broadcast that letters and telephone calls are not received by this office commenting on the highly professional yet interesting way this information is offered to enlighten the listeners. May I say that working with these men and women has been one of the most wonderful experiences I have ever known. I have come to know the professional man and woman as a person, a top-flight citizen interested in the welfare of the community. They are to a great degree responsible for winning the McCall Award.

May I take this opportunity to thank these fine people through you, not only for what they have done for others, but for what they have done for me. May we aim to carry on "ad astra".

Sincerely,

Anne Holland

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Bulletin

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(ex-officio)

LEWIS P. GUNDRY, M.D.

The names listed above are officers for the term beginning July 1, 1952 and ending June 30, 1953.

PRESIDENT'S LETTER

Over the course of time, the physician has been criticized, quite justly, by both patient and press for his lack of participation in public affairs. He has been accused of interesting himself only in those matters allied to science and his own profession. Politics and medicine would not mix, so it seemed, and the average medical man refrained from expressing his opinion on any political matter.

Recently, however, political events and changing philosophies have introduced a new rôle for the physician to play. Physicians recognized that the threat of compulsory health insurance involved them individually as well as jeopardized the American standards of government. They also know that it is the patient who will suffer most under a socialized medical movement. Government medicine is only the forerunner of general socialism bringing with it unlimited political evils.

Personal freedom and individual incentive must be preserved and it is this that has brought a medical man to the political stage. He is in an enviable position to influence good citizenship and he must determine first of all to discharge his duties as a good citizen himself.

The medical journals, within easy reach of all, keep him posted on all phases of federal legislation and he, in turn, can pass this information along to both his colleagues and patients. Support to the city, state and national medical organizations, which constantly work to combat the inroads of the socialization of medicine, should be given. Survival is possible only if the medical profession bands together through united and cooperative effort. The various medical organizations are the vehicles to provide that effort.

The proponents of federal medicine will not cease in their attempts, but will continue to attack from every quarter. To arm ourselves with knowledge, to bring about a better understanding and working relationship with our patients and to make our views known to our elected public officials are the basis for a successful campaign.

The very critics who formerly struck out at our profession for its "political lethargy" now ridicule our efforts in civic affairs. They intimate that medicine is losing the respect of the public because of our entrance into the political field, but nothing could be farther from the truth. A good American citizen will not lose respect for another who is fighting the battle for democracy.

It is now for us to act so that the American people will have confidence, knowing their doctors will not desert them, and determine to work together this year, with greater effort, to keep the doctor "in politics" so that freedom in our country will endure.

D. J. PESSAGNO, M.D.,
Chairman, Board of Directors.

ALUMNI HONOR AWARD—1953

Dr. Emil Novak Nominated by Medical Alumni

Dr. Emil Novak, Baltimore Medical College 1904, was nominated as the recipient of the 1953 Alumni Honor Award and Gold Key. Dr. Novak will be presented at the annual meeting of the Medical Alumni Association on June 4, 1953 and will deliver the principal address.

A renowned and world-recognized authority on gynecology and gynecologic pathology, Dr. Novak was born on March 8, 1884 in Baltimore, Maryland, the son of Joseph and Mary (Hajek) Novak. His early childhood and preliminary education was obtained in the schools of Baltimore. He graduated *Magna cum Laude* from the Baltimore Medical College in 1904. Following his graduation he became resident surgeon at the Maryland General Hospital, following which he entered practice.

At this time the rise of the Johns Hopkins School of Medicine and the correlative clinical and pathologic approach to the newly defined specialty of gynecology captivated the young surgeon and he began to study assiduously, developing considerable proficiency in this particular field. He was then appointed Associate Professor of Gynecology at the Baltimore Medical College, serving in this capacity from 1905 to 1909. He then became active in the same capacity at the College of Physicians and Surgeons, serving until 1915. During this time Dr. Novak became firmly established as a teacher of gynecology and a practitioner of the same specialty.

With the advent of World War I he served as a member of the Voluntary Medical Service Corps.

In 1915 with the merger of the College of Physicians and Surgeons with the School of Medicine of the University of Maryland Dr. Novak was appointed Assistant Professor of Gynecology at the Johns Hopkins University School of Medicine. He held this position until his retirement several years ago.

It was during his long association with the Johns Hopkins School of Medicine that he developed the Laboratory of Gynecology following in the footsteps of Drs. Howard Kelly and Thomas Cullen. His close application, his thirst for knowledge and

the extreme clarity and completeness of his presentations soon established him a solid reputation as a teacher of gynecology and particularly of gynecologic pathology.

His continued activity as an intensely interested student resulted in numerous publications numbering more than 300 on various aspects of gynecology and gynecologic pathology. During his period of service at the Johns Hopkins School of Medicine he became the author of four textbooks: "Menstruation and Its Disorders";



Dr. Emil Novak

© Udel

"The Woman Asks the Doctor"; "Gynecological and Obstetrical Pathology" and "A Textbook of Gynecology". Particularly, "Gynecological and Obstetrical Pathology" has been most popular as well as a fine and valuable text.

Dr. Novak has been noted for his ability to sift huge quantities of literature and diverse reports, picking from each the essence and the importance. He combines them in a lucid fashion, forcefully presented in a free-flowing, interesting and highly colored

personable manner. His writings bespeak the ease of his demonstrations and the clarity of his description.

He has been honored signally by many colleges and universities. Most notably he is proud of the Bachelor of Arts degree conferred upon him by Loyola College in Baltimore in 1912. This was not an honorary degree but was conferred following his enrollment and participation in the curriculum for the Bachelor of Arts degree following his graduation from the School of Medicine. (A college education was not necessary for admission to the School of Medicine in 1900.) Later Trinity College and the University of Dublin in Ireland honored him with a Doctor of Science degree. Tulane University in Louisiana bestowed upon him a similar honor. He has been made an honorary member of many foreign obstetrical and gynecologic societies. He is a Fellow of the American College of Surgeons, the American Gynecologic Association, and the American Association of Abdominal Surgeons, Gynecologists and Obstetricians. He is a member of the American Medical Association, the American Association for the Study of Internal Secretion and the Southern Surgical Association.

Dr. Novak has not confined his literary efforts to his own publications alone, but has served as Editor in Gynecology for the Obstetric and Gynecologic Survey. He is also a member of the Editorial Boards of the American Journal of Obstetrics and Gynecology, Cancer, the American Journal of Surgery, G. P. and numerous other publications. He is a member of the Phi Beta Pi fraternity.

The Medical Alumni Association in recognizing the ability and enviable achievements of this honored Alumnus is happy to bestow upon him the appropriate recognition and the high honor of the Alumni Award and Gold Key.

ALUMNI DAY — JUNE 4, 1953

Within the next several weeks a detailed program should reach all Alumni giving details of the Scientific Program and other events to take place on that day.

As previously announced members of the class of 1903 will be honored at special ceremonies and will receive their Fifty Year Certificates of service.

Make your reservations for the annual banquet early. Hotel reservations in Baltimore may be secured upon application through Mrs. Minette E. Scott, Executive Secretary.

CLASS OF 1952 NOTE

The questionnaire referred to on page xiii of the January, 1953 Bulletin will soon reach you. Please complete the questionnaire and return using the enclosed postcard. Tabulation will begin immediately. Results will be found in the October, 1953 Bulletin.

ASSOCIATION NEWS ON FILE

While the Bulletin of the School of Medicine does not publish comments of a political nature and while the Bulletin does not assume a point of view with regard to the issues arising between Government and organized medicine, the Editorial Office frequently receives releases and documents which might be of interest to physicians.

The Association of American Physicians and Surgeons, one of the leading agencies in the study of the relationship between organized medicine and Governmental agencies, releases numerous "News Letters" and other commentaries.

Among these has been a commentary on the various sections of Volume I of the report of the *President's Commission on the health needs of the nation*. This Commission, appointed by President Truman before his retirement, has prepared a multi-volume report of which only Volume I has currently circulated. The analysis of the findings of this Commission is very pertinently stated in the Bulletin #4-53 which is on file in the Bulletin Office.

Physicians residing out of state may obtain this information from the Association of American Physicians and Surgeons, 360 N. Michigan Avenue, Chicago 1, Illinois.

HAVE YOU CONTRIBUTED?

Again it is time for contributions to the American Medical Education Foundation. During the year 1952 the School of Medicine received over \$15,000 in direct contributions through the National Fund. Dean H. Boyd Wylie has recently announced that this money received from the National Fund has been put to use throughout the School of Medicine, where a supplemental appropriation was needed in order to maintain or advance the quality of medical education being offered the students.

The National Fund and the American Medical Education Foundation urgently need your contribution. Checks should be made payable to the American Medical Education Foundation and should be promptly sent to the Foundation c/o the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois. Deductible? Of course!

ALUMNI TO HEAD MARYLAND MENTAL INSTITUTIONS

Recent appointments as superintendents of several of the Maryland hospitals comprising the mental hospital system have been announced by Dr. Clifton T. Perkins, Chief of the Department of Mental Hygiene.

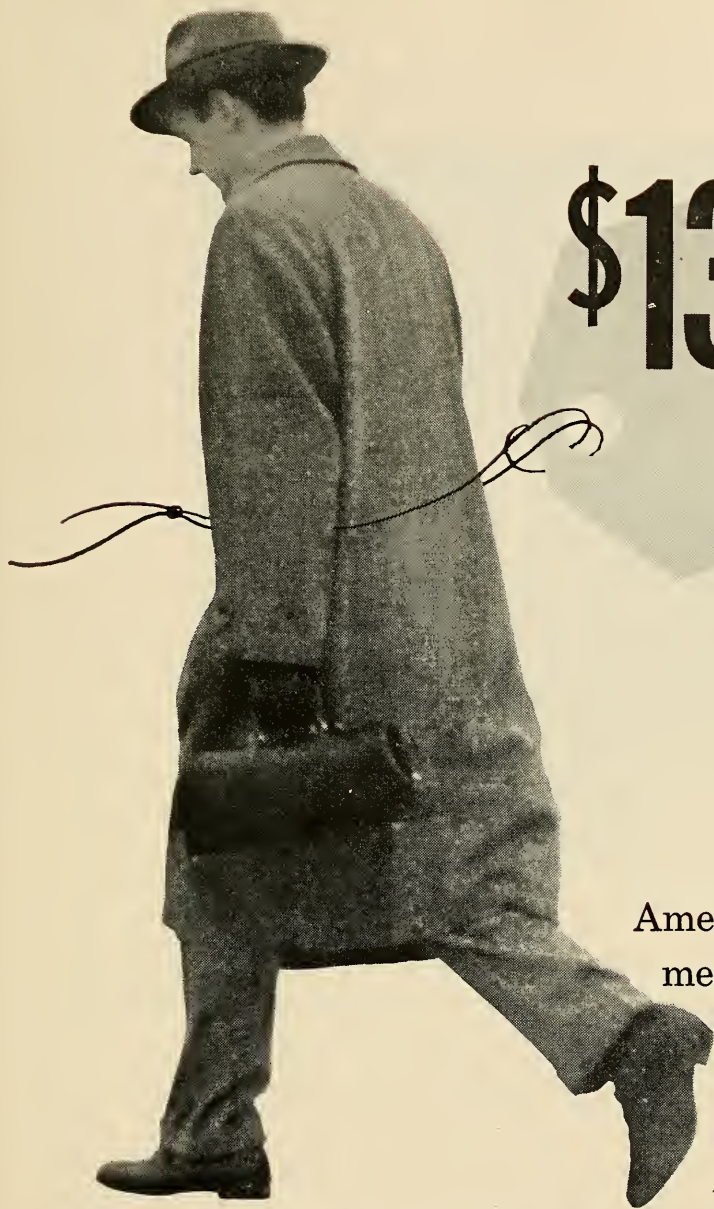
Dr. Isadore Tuerk, class of 1934, has been appointed Superintendent of the Spring Grove State Hospital at Catonsville, Maryland.

Dr. George C. Medairy, for many years associated as Clinical Director at the Rosewood State Training School, has been named Superintendent.

Dr. Arnold Eichert, class of 1938, and until recently on the staff of the Spring Grove State Hospital in Catonsville, has been named Superintendent of the Crownsville State Hospital, succeeding Dr. Jacob Morgenstern.

DR. TOULSON HONORED

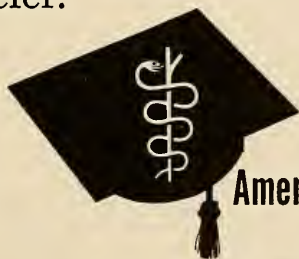
Dr. W. H. Toulson, Professor of Urology at the School of Medicine, was recently the recipient of a citation from his Alma Mater, Washington College in Chestertown, Maryland. These citations, awarded annually to alumni of the college are presented



\$13,356

America's
medical schools graduated
6,135 new doctors
of medicine last year.
It cost \$13,356
to train each of them.

Most of this becomes medical school operating deficit which we as a profession must help meet. We will send your contribution along to the medical school of your choice if you prefer.



American Medical Education Foundation

535 North Dearborn Street, Chicago 10



Dr. Daniel Z. Gibson presents citation to Dr. W. H. Toulson

in recognition of proficiency, distinguished service and for contributions in the professions and in business. The illustration shows Dr. Toulson receiving the citation from Dr. Daniel Z. Gibson, President of Washington College.

PAST PRESIDENT CONTINUES IN ACTIVE PRACTICE

Dr. Charles R. Foutz, Class of 1897, Recently Honored by Home Town

Dr. Charles R. Foutz, class of 1897 and past President of the Medical Alumni Association (1923-33), was recently honored on his 80th birthday by an "open house" arranged by scores of friends, medical and business associates and townspeople where he has been practicing for many years.

Dr. Foutz has not only been active in the practice of medicine in Westminster, Maryland but has found time for numerous fraternal activities and has been an honorary member of the local Fire Department. He is also a member of several social clubs, a member of the Army Advisory Committee of the 2nd Army and a member of the Board of Trustees of the Maryland General Hospital. Dr. Foutz also continues to be active in many business enterprises. A tribute was paid to Dr. Foutz in an article appearing in the Baltimore Sun.

unusually effective in infections
of the gastrointestinal tract...

Chloromycetin[®]

is indisputably the drug of choice
in typhoid fever and is considered by many
to be useful in other salmonellosis

outstanding in acute Shigella dysentery, CHLOROMYCETIN permits immediate treatment regardless of dehydration and provides rapid relief.

exceptionally well tolerated, CHLOROMYCETIN (chloramphenicol, Parke-Davis) is noted for the infrequent occurrence of even mild gastrointestinal side effects, an important consideration in treating infections of the gastrointestinal tract. Although serious blood disorders following its use are rare, it is a potent therapeutic agent, and should not be used indiscriminately or for minor infections — and, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

Chloromycetin is a notably effective, well tolerated, broad spectrum antibiotic



Parke, Davis & Company
DETROIT, MICHIGAN

ITEMS

Dr. L. Harrell Pierce, formerly medical resident at the University Hospital and who recently completed his training in Ophthalmology, has opened his office for the practice of Ophthalmology at 700 Cathedral Street in Baltimore.

Dr. Frank J. Ayd, Jr., class of 1945, has announced the removal of his office to 6231 York Road, Baltimore 12, Maryland. Dr. Ayd limits his practice to Psychiatry.

Dr. Harry Patterson Mack, class of 1948, currently Assistant Professor of Anatomy at the School of Medicine, is now physician for the Med. Co. 7th CAV Regiment, APO 201, % Postmaster, San Francisco, California.

Dr. E. Irving Baumgartner, class of 1931, has recently served as President of the Maryland Academy of General Practice, a subsidiary of the American Academy of General Practice.

Dr. Lewis P. Gundry, class of 1928, has announced the reorganization of his hospital at Relay, Maryland. The hospital, formerly known as the Relay Sanitarium, will now become the Relay Hill Hospital and will be an "open staff" hospital providing facilities for convalescent cases and ambulatory geriatric patients.

Dr. Manuel Brown, class of 1938, was a recent visitor to Baltimore. Dr. Brown currently practices allergy in Tulsa, Oklahoma.

Dr. Wetherbee Fort, class of 1919, has announced the removal of his office to 1118 Saint Paul Street, Baltimore 2, Maryland.

Dr. Charles W. Hawkins, class of 1946, has announced the opening of his office for the practice of Urology at 307 Professional Building, Chattanooga 3, Tennessee.

Dr. Milton R. Righetti, class of 1950, has announced the opening of his office for the general practice of Medicine and Surgery at 600 Lewelling Boulevard, San Lorenzo, California.

Dr. John C. Ozazewski, class of 1943, has moved his office to 1115 St. Paul Street, Baltimore. Dr. Ozazewski recently entered practice in the specialty of Ophthalmology.

Dr. E. Thornton Pfeil, class of 1943, who recently was Chief of the Neurosurgic Service at the Brooke Army Hospital, San Antonio, Texas, has resigned his commission and has entered the private practice of neurologic surgery with offices at 1101 South Texas Building, San Antonio 5, Texas.

Dr. Edward F. Cotter, class of 1935, has announced the removal of his office for the practice of Internal Medicine and Neurology to 6 East Read Street, Baltimore 2, Maryland.

Dr. James J. Gerlach, class of 1946, has recently opened his office at 4 East Eager Street in Baltimore for the practice of Otolaryngology. Dr. Gerlach served a Rotating Internship at the Mercy Hospital and then served in the United States Army for three years. He then served a two year residency in Otolaryngology at Mercy Hospital and completed his studies at the University of Pennsylvania Graduate School of Medicine.

Dr. James M. Bisanar, class of 1948, recently on the Staff of the University Hospital in Baltimore, has opened his office at 431 Sixth Street, N.W., in Hickory, North Carolina.

Dr. Robert Z. Berry, class of 1943, has resumed the practice of Laryngology and Bronchoesophagology, and has located his office at 211 Medical Arts Building, Baltimore, Maryland.

Dr. Oscar B. Camp, class of 1945, has announced the opening of his office for the practice of general surgery at 1724 Eutaw Place, Baltimore.

Dr. E. Anne Dentry Mattern, class of 1947, has been recently appointed Resident in Surgery at the Union Memorial Hospital in Baltimore.

Dr. Alfred S. Garrison, class of 1943, has announced the removal of his office to the Latrobe, Charles and Read Streets, Baltimore 2, Maryland.

Dr. Henry J. L. Marriott, of the Faculty of Medicine, has announced the removal of his office for the practice of internal medicine to the University Hospital, Redwood and Greene Streets, Baltimore.

Dr. G. Kenneth Hawkins, class of 1950, is now associated with the Schering Corporation, Bloomfield, New Jersey, as a member of the Research Staff.

Dr. George H. Yeager, class of 1929, has been recently named Chief of the Department of Surgery at the South Baltimore General Hospital.

Dr. George W. Tyrrell, class of 1893, was recently feted on the sixtieth anniversary of his entrance into the practice of medicine. Members of the local medical group held a testimonial dinner in his honor at the Oak Hills Manor at Metuchen, New Jersey on October 22, 1952. Dr. George F. Hilker and a distinguished group of speakers outlined the many aspects of Dr. Tyrrell's long and interesting practice.

Drs. Richard G. Coblentz, James G. Arnold, Jr., and Raymond K. Thompson have announced the removal of their offices to 11 East Chase Street in Baltimore, effective October 1, 1952.

Dr. William H. Mosberg, Jr., class of 1944, who was recently associated with the Manteno State Hospital in Illinois, has returned to Baltimore and has entered the practice of neurosurgery, his office being located at 11 East Chase Street in Baltimore.

Dr. Maurice Nataro, class of 1936, has recently been appointed Assistant Professor of Medicine at the University of Kentucky School of Medicine, Louisville, Kentucky and Medical Director of Atomic Medical Research at Nichols General Hospital, also in Louisville.

Dr. Joseph S. Fischer, class of 1946, has announced the opening of his office at 111 East 88th Street, New York City, for the practice of Psychiatry.

Dr. George Gerard Schlesinger, class of 1940, has announced the removal of his office to 16 East Biddle Street, Baltimore 2 Maryland. Dr. Schlesinger will engage in the practice of Internal Medicine.

Dr. Morton E. Bassan, class of 1942, has announced the formation of the Puget Sound Psychiatric Clinic located at 710 Fourth and Pike Building in Seattle, Washington.

Dr. Roland A. Christensen, (Comdr., M.C., USN), class of 1937, has been recently transferred to the Dependents Service, United States Naval Hospital, Oakland, California.

FRATERNAL NEWS

ALPHA OMEGA ALPHA



Completion of the academic activities for the local chapter included the annual Student Papers Meeting, Spring Initiation Banquet and Lecture both held on May 7, 1952. The members of the student body presenting papers in collaboration with members of the Faculty who discussed them, included the following:

Irwin Moss—Use of Radio-active isotopes at the University Hospital (Discussant—Dr. Robert E. Bauer)

Bernard Shocket—Teaching the doctor-patient relationship (Discussant—Dr. E. T. Lisansky)

George Peck—The concentration of hematoporphyrin in lymphatic tissue of dogs (Discussant—Dr. Frank H. J. Figge)

Dee Hunter—A new concept of urinary bladder musculature (Discussant—Dr. Eduard Uhlenhuth)

Richard Alquist—Recent developments in the surgical treatment of malignant hypertension (Discussant—Dr. Samuel T. R. Revell, Jr.)

Norman Spritz—The present status of BCG (Discussant—Dr. Theodore E. Woodward)

Phin Cohen—Review of the cases of lung abscess at the University Hospital, Baltimore, 1930-1950 (Discussant—Dr. Theodore E. Woodward)

William Mathews—The pathogenesis of acute pancreatitis (Discussant—Dr. Gordon E. Gibbs)

A similar program was planned for 1953.

An Initiation Banquet for new student and Faculty members was also held on May 7th at the Belvedere Hotel in Baltimore. Those who joined the society at that time included the following members of the Faculty of the School of Medicine.

Dr. Edwin H. Stewart, Jr.	Dr. A. Harry Finkelstein
Dr. Maurice C. Pincoffs	Dr. Harry M. Robinson, Sr.
Dr. Jacob E. Finesinger	Dr. Henry J. L. Marriott
Dr. John A. Hightower	Dr. Paul Friedman

Dr. Ephraim T. Lisansky

Members of the Junior class of the School of Medicine included:

R. Judson Dowell	Ronald E. Mendelsohn
Hugh V. Firor	George C. Peck
Patrick Gillotte	Grace A. Bastian

Following the initiation, members and invited guests met in the Gordon Wilson Hall at the University Hospital to hear Sir Allan Daley, former Minister of Health for London, deliver the Society's annual Spring lecture. He spoke on "The Present Status of Socialized Medicine in England".

Following the Summer recess, the Society began the year 1952-53 with a lecture by Dr. Maxwell Wintrobe, Professor of Medicine at the University of Utah. Dr. Wintrobe spoke on "Experimental Studies in Macrocytic Anemia; Their Significance in Relation to Pernicious Anemia". An Initiation Banquet preceded this lecture. The following seniors were initiated.

Robert Berkow	George Himmelwright
Harrison Langrall	Rafael Longo-Cordero
William Slasman	Herbert Walters

Plans were made then for a Student Papers Day and Spring Lecture to be held in May, 1953. The speaker is to be Dr. David P. Barr, Professor of Medicine, Cornell University. Dr. Barr will speak on the subject "Chemical Factors in the Pathogenesis of Atherosclerosis".

The chapter has been effectively guided during the year 1952-53 by Drs. Milton S. Sacks and J. Edmund Bradley who have served as Faculty Counselor and Faculty Secretary-Treasurer respectively. Student officers for the current year are William Kiser, President; Israel Weiner, Vice-President and Judd Dowell, Secretary.



PHI DELTA EPSILON LECTURE

Dr. Homer W. Smith, Professor of Physiology at the New York University-Bellevue Medical Center College of Medicine, New York, gave the annual Phi Delta Epsilon lecture on Tuesday, February 17, 1953. The topic of Dr. Smith's paper was *The Development of Modern Renal Physiology*.

OBITUARIES

Dr. Edward Anderson Looper

Dr. Edward Anderson Looper died suddenly at his home on January 4, 1953. Dr. Looper was born in Dalton, Georgia, taking his pre-medical education at Emory University in Atlanta. Coming to Baltimore, he entered the University of Maryland School of Medicine and was graduated in 1912. After his rotating internship he undertook the specialty of otolaryngology.

Just as he was starting practice in Baltimore, World War I began. Dr. Looper joined the University of Maryland Base Hospital #42, serving with distinction in France for a little over one year. Returning to Baltimore, he resumed the practice of his specialty, becoming Professor of Diseases of the Nose and Throat at the School of Medicine in 1930. This position he retained until his death.



Dr. Edward A. Looper

© Udel

Dr. Looper was a member of the visiting staff of many of the Baltimore hospitals. He was consultant to many hospitals throughout the City and State. With the construction of the new University Hospital, Dr. Looper was instrumental in the

development of a large and modern Nose and Throat Clinic. He was one of the pioneers in bronchoscopy. There are several graphic accounts of his success in saving the lives of small children who had swallowed or aspirated foreign bodies. Many of the specimens he removed are now on exhibit in the Looper Clinic. Dr. Looper was particularly interested in tuberculosis of the nose and throat and pioneered in the cauterization of the larynx in the treatment of laryngeal tuberculosis. Almost every Sunday he would drive to the State Sanatorium in the Blue Ridge Mountains and spend the day working in the clinic.

He was a member of many important societies in his specialty and frequently presented papers before many of them. One of the most interesting of Dr. Looper's contributions to surgery was an original operation for the removal of the larynx for carcinoma. Dr. Looper pioneered in the development of the artificial larynx, developed following his suggestion, by engineers of the Western Electric Laboratories.

Dr. Looper had many diverse, non-medical interests. He was active in many civic enterprises. He enjoyed life not only in Baltimore but at his summer home on the Magothy River with his family and many of his closer friends. He was interested in travel and had a large collection of colored motion pictures.

In 1921 he married Miss Lola Patenall of Baltimore. He had 3 children, of whom 2 now survive. These are Edward A. Jr. and Sybil Ann. A third child, a daughter, died in childhood. In her memory Dr. Looper donated the Nose and Throat Clinic at the University Hospital which is named after his daughter.

He was an earnest and faithful worker. Death came as a great shock to his associates.

W. HOUSTON TOULSON, M.D.

Dr. Harvey K. Fleck

Dr. Harvey K. Fleck, P. & S, class of 1904, and former Associate Professor of Ophthalmology at the School of Medicine, died at his home in Baltimore on January 3, 1953, aged 77. Dr. Fleck was born in Lancaster County, Pennsylvania, moving to Easton, Maryland as a child. After his graduation from the College of Physicians and Surgeons, he began to specialize in diseases of the eye, ear, nose and throat, later becoming active on the staffs of Mercy, St. Agnes and the Baltimore Eye, Ear, Nose and Throat Hospitals. Dr. Fleck retired from active practice in 1949.

Bampffield, Fred James, Baltimore, Md.; class of 1917; aged 60; died, September 20, 1952, of coronary thrombosis.

Baynes, Ralph Henry, Hurdle Mills, N. C.; class of 1914; aged 61; died, August 25, 1952, of uremia, subacute glomerular nephritis and hypertension.

Berndt, Daniel Albert, Portsmouth, O.; P & S, class of 1896; aged 78; died, November 3, 1952.

Bigelow, Samuel Edward, Fergus Falls, Minn.; B. M. C., class of 1904; aged 71; died, recently.

Brooks, Alan Goodwin, Robinson, Ill.; class of 1906; aged 67; served during World War I; died, September 25, 1952.

Brown, Otis S., Warren, Pa.; class of 1886; aged 89; died, October 14, 1952.

Canby, Charles B., Van Nuys, Calif.; P & S, class of 1897; aged 78; died, September 25, 1952, of coronary thrombosis.

Carruth, Robert McGimsey, New Roads, La.; P & S, class of 1880; aged 96; died, November 6, 1952.

Cook, Hugh Francis, Newark, N. J.; P & S, class of 1896; aged 80; served during World War I; died, November 14, 1952.

Erskine, Arthur Wright, Cedar Rapids, Ia.; B. M. C., class of 1908; aged 67; died, December 10, 1952, of cerebral arteriosclerosis.

Folk, John, Bridgeport, W. Va.; P & S, class of 1904; aged 85; died, December 11, 1952, of cardiac failure.

Gardner, Willetts Walton, Patchogue, N. Y.; class of 1921; aged 60; died, October 15, 1952, of coronary disease.

Grant, Sylvia, Clarksburg, W. Va.; class of 1924; aged 61; died, November 9, 1952, of cardiac failure.

Hilliard, Joshua, Manahawkin, N. J.; P & S, class of 1901; aged 79; died, September 26, 1952, of acute myocardial infarction.

Holly, Julius David, Baltimore, Md.; class of 1921; aged 54; died, October 9, 1952.

Hooper, Joseph Ward, Wilmington, N. C.; class of 1909; served during World War I; aged 65; died, September 3, 1952, of bilateral ureteral obstruction.

Keown, Thomas William, Baltimore, Md.; B. M. C., class of 1895; aged 84; died, June 28, 1952, of carcinoma of the colon with metastases.

Koonce, S. Everett, Wilmington, N. C.; P & S, class of 1896; aged 81; died, June 26, 1952, of coronary occlusion.

Marvel, Reuben Joshua, Center Conway, N. H.; P & S, class of 1903; aged 79, died, November 8, 1952.

Michelson, Rudolph A., Baltimore, Md.; P & S, class of 1909; aged 66; died, August 20, 1952, of pulmonary embolism and hypertensive cardiovascular disease.

Norment, John Edwin, Clinton, Ia.; class of 1924; aged 52; died, November 12, 1952, of coronary occlusion.

Norris, Lester Francis, Madison, Me.; P & S, class of 1912; aged 68; died, October 30, 1952.

Royall, M. A., Elkin, N. C.; P & S, class of 1885; aged 90; died, October 11, 1952, of hypertensive cardiovascular disease and terminal pneumonia.

Sleet, John Carey, Norfolk, Va.; class of 1899; aged 76; died, September 19, 1952, of intestinal obstruction.

Steenberger, John Harness, Huntington, W. Va.; P & S, class of 1908; aged 68; died, August 25, 1952.

Stevenson, Olen Jay, Chester, Pa.; B. M. C., class of 1906; aged 69; died, August 21, 1952.

Sturgis, Robert Washington, Norfolk, Va.; class of 1896; aged 82; died, November 17, 1952, of cerebral hemorrhage.

Weber, Harry Clarence, Bartlesville, Oklahoma; P & S, class of 1905; aged 70; died, December 10, 1952, of coronary occlusion.

Weisman, Samuel, Baltimore, Md.; class of 1933; aged 42; died, September 25, 1952, of coronary occlusion.

Wilson, William Homer, St. Albans, W. Va.; B. M. C., class of 1898; aged 77; served during World War I; died, December 25, 1952, of intestinal obstruction.

Dr. Caleb N. G. Rohrer

Dr. Caleb W. G. Rohrer, P & S, class of 1900, died in Baltimore on July 23, 1952. Dr. Rohrer was 79, a native of Washington County, Maryland, and a son of Jacob C. Rohrer and Barbara Albrecht Rohrer. He was noted principally for his interest in pathology and bacteriology. Dr. Rohrer not only was the first resident pathologist of the Baltimore City Hospital but was Maryland's oldest ranking public health worker and an authority on rabies. During his long life of practice Dr. Rohrer had accumulated a large private medical library amounting to some 7,000 volumes.

Dr. Lester Francis Norris

Dr. Lester Francis Norris, P & S, class of 1912, died at his home in Madison, Maine, on October 30, 1952. Born in Brocton, Massachusetts, the son of Wallace Norris and Elmina Frances Bates, he was educated in the public schools of Brocton and graduated from the Williston Seminary, Easthampton, Massachusetts.

Following his graduation from the College of Physicians and Surgeons he held the position of Assistant Physician at Taunton State Hospital and was Assistant Superintendent of the Bangor State Hospital for 8 years. He was House Physician at the Central Maine General Hospital in Lewiston, Maine for 1 year and was State Psychiatrist to the Women's Reformatory at Skowhegan, Maine. From 1922 until his death he practiced medicine in Madison.

Blackwell, Edward Maurice, Commdr. USN, (ret'd.), Arlington, Va.; class of 1890; served during the Spanish-American War and World War I; aged 86; died, August 23, 1952.

Campbell, William S., Albany, Mo.; class of 1909; aged 75; died, April 13, 1952, of coronary thrombosis.

Cleasby, Ernest M., Orleans, Vt.; B.M.C., class of 1906; aged 72; died, August 18, 1952, of coronary occlusion.

Crowell, Lester A., Sr., Lincolnton, N. C.; B.M.C., class of 1892; aged 84; died, May 29, 1952, of surgical shock following cholecystectomy.

Dolan, William Edward, Worcester, Mass.; B.M.C., class of 1902; aged 73; died, July 21, 1951, of coronary thrombosis.

Donnelly, Robert Joseph, Newark, N. J.; B.M.C., class of 1897; aged 76; died, July 26, 1952, of arteriosclerotic heart disease.

Franklin, David, Baltimore, Md.; class of 1908; aged 64; died, May 1, 1952, of cerebral hemorrhage.

Kermisch, Albert, Baltimore, Md.; class of 1931; aged 45; died, June 24, 1952, of cerebrovascular accident.

Lewis, Arthur Cuthbert, Fall River, Mass.; P & S, class of 1893; aged 78; died, July 6, 1952.

Owens, William Duncan, Warrenton, Va.; class of 1919; served during World War II; aged 58; died, August 6, 1952.

Owensby, Newdigate Moreland, Atlanta, Ga.; class of 1904; aged 69; served during World War I; died, August 10, 1952, of coronary thrombosis.

Payne, John Bosworth, Arlington, Va.; P & S, class of 1896; aged 79; died, July 1, 1952, of arteriosclerosis and pulmonary embolism.

Smoot, Aubrey Cannon, Georgetown, Del.; class of 1928; aged 53; died, August 16, 1952, of a heart attack.

Stevens, Thomas F. A., Baltimore, Md.; class of 1912; aged 66; died, July 26, 1952, of thrombosis of the inferior mesenteric artery, cardiac decompensation and diabetes mellitus.

Waters, James Edward, Gardner, Mass.; B.M.C., class of 1905; served during World War I; aged 73; died, August 16, 1952.

Yeager, W. Howard, Hagerstown, Md.; class of 1912; aged 70; died, July 19, 1952, of acute coronary occlusion.

Stansfield, Clarence Winfield, Fall River, Mass.; class of 1906; aged 71; died, May 16, 1952, of bronchopneumonia and arteriosclerosis.

Tickle, Thomas Gooch, New York, N. Y.; class of 1916; aged 60; died, April 26, 1952.

Tilt, Leroy Wortendyke, Jr., Shelby, N. C.; class of 1943; aged 33; served during World War II; died, May 21, 1952, of Hodgkin's disease.

Webb, William S., Wheeling, W. Va.; P & S, class of 1904; aged 73; died, April 11, 1952, of acute suppurative pancreatitis.

White, Thomas Francis, Baltimore, Md.; class of 1920; aged 61; died, March 6, 1952, of coronary thrombosis.

Winters, William P., Mt. Pleasant, Utah; P & S, class of 1893; aged 83; died, July 13, 1952.

Worrell, Thomas Hendrick, Hillsville, Va.; B.M.C., class of 1912; aged 66; died, February 23, 1952, of acute coronary occlusion and hypertension.

Bulletin OF THE SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

VOLUME 38

July, 1953

NUMBER 3

CHLOROMYCETIN IN THE TREATMENT OF DERMATOSES

A REPORT ON 1013 PATIENTS*

HARRY M. ROBINSON, JR., M.D., ISRAEL ZELIGMAN, M.D., ALBERT SHAPIRO, M.D.,
AND MORRIS M. COHEN, M.D.

Ehrlich and his associates (1), studied the antibiotic activity of a species of streptomycetes which was originally isolated by Burkholder, and this work led to the preparation of the crystalline antibiotic compound, chloromycetin. Initial studies of the antibiotic spectrum of this compound indicated that it was effective in rickettsial infections of chick embryos and mice, and in vitro studies demonstrated its activity against gram negative bacteria and *Borrelia recurrentis*. Chloromycetin was also shown to be moderately active against *Mycobacterium tuberculosis* and gram positive bacteria (2, 3).

Following the reports of its value in the treatment of epidemic typhus (4, 5) and scrub typhus (6), Woodward and his co-workers demonstrated its curative effect in typhoid (7, 8) and Pincoffs, et al, reported its efficacy in the treatment of Rocky Mountain spotted fever (9). Chloromycetin also proved to be an effective agent against the gonococcus and the *Spirochaeta pallida* (10, 11) but has not been recommended for general use in the treatment of gonorrhea and syphilis. Greenblatt and his co-workers (12) were the first to demonstrate the value of chloromycetin in the treatment of granuloma inguinale, and since that time other enthusiastic reports have been published (13, 14). Shaw (15) reported two cases of dermatitis herpetiformis which were treated with chloromycetin, but failed to respond to a dose of 250 mgm. 4 times daily over a period of 2 weeks. Johnson, et al (16), treated 3 cases of acute disseminated lupus erythematosus with chloromycetin without benefit. In 2 of his cases the existing anemia became worse while under treatment. Robinson, Sr. (17) administered chloromycetin to 13 patients with chronic discoid lupus erythematosus. In 5 of these individuals all lesions completely disappeared and in 6 there was improvement. One of his patients developed acute disseminated lupus erythematosus, and one showed no improvement. Storck and Rinderknecht (18) obtained beneficial results with very small doses of chloromycetin in cases of acute exudative eczema. Beinbauer (19) treated a group of 76 cases with various dermatoses

* From the Department of Dermatology, University of Maryland School of Medicine, Baltimore. Received for publication July 30, 1952.

The Chloromycetin capsules and ointment used in this study were furnished by Dr. E. A. Sharp of Parke, Davis & Co.

of established or questionable virus etiology with chloromycetin and stated that the clinical response was not striking and the percentage of cures was low. The daily dose he administered varied from 500 to 1500 mgm. Eighteen patients with eczema of the ear canal were treated with chloromycetin in carbowax by Cornbleet and Scherr (20) with good results. Dawson and Simon (21) obtained rapid and complete recovery in 4 cases of herpes zoster and noted no improvement in 2 patients with post-herpetic neuritis. Winterton (22) was also enthusiastic about the results of treatment of herpes zoster with chloromycetin. Newman and Feldman (23) stated that chloromycetin cream was the most satisfactory topical medication they had used in the treatment of superficial pyogenic infections.

This report is based on an investigation of the value of chloromycetin in dermatologic therapy. The drug was used by local application and by oral administration. An attempt was made to use this antibiotic in the treatment of all of the various dermatoses usually encountered in a large clinic. The diagnosis of most of the cases was confirmed by clinical consultation as well as by adequate laboratory procedures, and post-treatment observations were confirmed by 2 or more of the authors whenever possible. The general plan for oral administration and local application was to treat each patient for 3 weeks unless involution of lesions occurred or an adverse reaction developed. When feasible, placebos were administered as controls, particularly in some chronic dermatoses and self-limited disorders.

PATIENTS STUDIED

This report includes observations on 1013 patients with various dermatoses. Of these, 463 received chloromycetin by mouth and 550 were treated with the local application of 1 to 2 per cent ointment.

PREPARATIONS USED

Chloromycetin was administered orally to adults in 250 mgm. capsules and in 50 mgm. capsules to children. For local application it was dispensed as a 1 to 2 per cent ointment in the following two bases:

Cetyl alcohol	12.0
Petrolatum liquid, heavy	10.0 or 20.0
Duponal C	1.0
Propylparahydroxy benzoate1
Aqua dest. q.s.	100.0

ORAL ADMINISTRATION OF CHLOROMYCETIN

Dosage Schedules

All adults of average size were given an initial dose of 2 grams followed by 0.5 gram 4 times daily. If there was no noticeable improvement after 2 or 3 weeks of therapy the administration of the drug was discontinued. Children under 10 years of age were given an average dose of 50 milligrams per kilogram of body weight divided into 4 doses in a 24 hour period.

CHART 1

Oral Administration of Chloromycetin in the Treatment of Dermatoses

Conditions definitely benefitted

DISEASE	TOTAL CASES	GOOD RESULT	POOR RESULT	IMPROVED: INCOMPLETE FOLLOW-UP	NO FOLLOW-UP	SMALLEST DOSE GRAMS	LARGEST DOSE GRAMS
Abscess.....	9	8		1		16	38
Cellulitis.....	28	25	1		2	8	32
Dermatitis repens.....	4	3		1		23	68
Erysipelas.....	6	6				16	30
Erythema multiforme.....	29	27	2			14	108
Erythema multiforme bullosum.....	10	9		1		16	50
Furunculosis.....	20	16	1		3	6	58
Granuloma inguinale.....	20	18		2		18	72
Hordeolum.....	3	3				6	16
Kerion.....	10	9		1		4.3	16
Hidradenitis suppurativa.....	11	10			1	19	30
Pyoderma.....	6	5		1		4	8
Paronychia.....	13	8	3	2		16	94

CHART 2

Oral Administration of Chloromycetin in the Treatment of Dermatoses

Conditions occasionally, temporarily, or partially improved

DISEASE	TOTAL CASES	GOOD RESULTS	PARTIAL IMPROVEMENT	TEMPORARY IMPROVEMENT	NO IMPROVEMENT	NO FOLLOW-UP	SMALLEST DOSE GRAMS	LARGEST DOSE GRAMS
Acne conglobata.....	28	3	4	16	3	2	30	123
Acne rosacea.....	3			3			30	44
Acne vulgaris.....	39	2		37			44	132
Apthous stomatitis.....	5	2	1	1	1		23	30
Dermatitis herpetiformis.....	4	1			3		60	90
Eczema, infected.....	10		8			2	3.4	38
Epidermophytosis, infected...	11		8		1	2	14	44
Erythema nodosum.....	5	3	1		1		21	44
Folliculitis.....	14	8		5	1		6	102
Granuloma annulare.....	3	1	1	1			25	40
Geographical tongue.....	3	1		1	1		12	14
Herpes zoster.....	13	6			6	1	10	26
Infectious eczematoid dermatitis.....	10	4	3	1	1	1	30	42
Kaposi's varicelliform eruption.....	2	1			1		24	120
Lupus erythematosus, chronic disc.....	16		5		11		86	482
Lymphangioma circumscrip- tum, infected.....	1		1				10	
Otitis externa.....	4	2	1		1		22	30
Pityriasis rosea.....	27	1	18		5	3	12	30
Seborrheic dermatitis, in- fected.....	3		2			1	36	58
Stasis ulcers, infected.....	2		2				24	156
Sycosis vulgaris.....	5	1	2	2			16	44

RESULTS OF ORAL TREATMENT WITH CHLOROMYCETIN

The results of oral therapy may be divided into 3 categories:

1. Conditions definitely benefitted (chart 1)
2. Conditions occasionally, partially or temporarily improved (chart 2)
3. Conditions not improved (chart 3)

This drug proved to be of definite value in those conditions in which there was involvement by pyogenic organisms, such as: abscesses, cellulitis, dermatitis repens, erysipelas, furunculosis, hordeolum, kerion, hidradenitis suppurativa, pyoderma, and paronychia. There was an excellent response in 37 of 39 cases with erythema multiforme and erythema multiforme bullosum treated with chloromycetin, and thus far, recurrences have been noted in only 2 of these patients. Treatment of

CHART 3

Oral Administration of Chloromycetin in the Treatment of Dermatoses

Conditions not benefitted

DISEASE	TOTAL CASES	DISEASE	TOTAL CASES
Alopecia areata	2	Pemphigus erythematodes	1
Atopic dermatitis	7	Psoriasis	5
Angioneurotic edema	2	Scleroderma	2
Condylomata acuminata	4	Seborrheic dermatitis	6
Dermatitis venenata	2	Sarcoid	2
Epidermophytosis	10	Sporotrichosis	1
Erythema induratum	3	Tinea capitis	4
Fixed drug eruption	2	Trichophytosis corporis	1
Herpes simplex	4	Tinea versicolor	1
Keratosis senilis	2	Tuberculosis verrucosa cutis	1
Lichen planus	3	Urticaria	2
Lichen sclerosus et atrophicus	2	Verruca vulgaris	5
Leukemia cutis	1	Verruca plana juvenilis	5
Molluscum contagiosum	6		

granuloma inguinale with chloromycetin was initiated in 20 cases, and of these, 18 completed the course of therapy. Two patients improved but were lost from observation before the treatment was completed. No relapses have been noted in the 18 who were treated until all of the lesions completely healed. The shortest post-treatment observation period has been 6 months and the longest, 1 year.

A small number of patients with acne vulgaris, acne conglobata, and folliculitis obtained an excellent clinical result with complete involution of lesions without remission, but the vast majority of these patients improved while taking chloromycetin therapy but had relapses when the drug was discontinued. The same results were observed in geographical tongue, granuloma annulare, and sycosis vulgaris. The drug was of definite value in controlling the secondary infection in cases of infected eczema, infectious eczematoid dermatitis, infected seborrheic dermatitis, infected epidermophytosis, and infected stasis ulcers, but, emphasis is placed on the fact that while the secondary infection was eradicated the primary dermatosis was not im-

proved. In conditions such as herpes zoster, pityriasis rosea, and other self-limited diseases it was not possible to properly evaluate the effect of the drug unless dramatic involution of lesions occurred. In 6 cases of herpes zoster there was prompt relief from pain and disappearance of lesions in from 7 to 12 days, but the administration of chloromycetin had no apparent influence on the course of the disease in the remaining 6. Four of these cases developed post-herpetic pain, which was not affected by the drug. One patient with Kaposi's varicelliform eruption had relief of symptoms in 5 days after beginning treatment with chloromycetin, but another patient not only did not improve after 2 weeks of this therapy but developed encephalitis as a complication of the disease. Eighteen patients with pityriasis rosea had beginning involution of lesions 1 week after beginning treatment with chloromycetin and after 2 weeks all lesions had disappeared. Nine similar cases, however, were not benefitted. There was partial improvement of lesions in 5 patients who had chronic discoid lupus erythematosus while they were receiving the drug, but 11 of them were

CHART 4

Adverse Reactions to Oral Administration of Chloromycetin

NUMBER OF REACTIONS	TYPE OF REACTION
5	Leucopenia in chronic discoid lupus erythematosus
6	Folliculitis
2	Vomiting
1	Vomiting and diarrhea
2	Nausea
6	Glossitis
1	Malaise
1	Epigastric discomfort

not improved. Four of this group developed severe leucopenia with neutropenia, and it was necessary to discontinue treatment. After the administration of chloromycetin was stopped the blood counts of 2 of these patients promptly returned to normal, but in the remaining cases the blood changes did not revert to normal even after 6 months of post-treatment observation.

As noted in chart 3 there were a large number of dermatologic entities treated with chloromycetin which did not respond to the oral administration of this drug.

ADVERSE REACTIONS TO THE ORAL ADMINISTRATION OF CHLOROMYCETIN (CHART 4)

Sixteen patients with chronic discoid lupus erythematosus were treated with chloromycetin, and 4 in this group developed leucopenia with neutropenia. Two of these patients made prompt recovery when the drug was discontinued, while another still retained abnormal blood conditions after 6 months. It is interesting to note that these 4 reactions occurred in females.

Six patients developed mild folliculitis which disappeared promptly after the drug was discontinued. It was necessary to stop the drug in 1 patient because of severe vomiting, and in another because of diarrhea and vomiting. Six patients developed glossitis which was severe enough to stop administration of chloromycetin. Two cases

developed mild nausea, one had moderate malaise and one complained of epigastric discomfort, but it was not necessary to stop the drug in any of these patients.

CHART 5

Local Application of Chloromycetin in the Treatment of Dermatoses
Conditions definitely benefited

DISEASE	TOTAL CASES	GOOD RESULT	POOR RESULT	IMPROVED NO FOLLOW-UP	NO FOLLOW-UP	SHORTEST TIME FOR GOOD RESULT	LONGEST TIME FOR GOOD RESULT
Abscess, draining	3	3				6 days	11 days
Dermatitis repens	13	11		2		9 days	21 days
Ecthyma	79	67	1	7	9	4 days	16 days
Impetigo contagiosa	118	90			28	3 days	12 days
Paronychia, purulent	4	3	1			12 days	14 days
Pyoderma	47	29	1	4	13	4 days	28 days
Otitis externa	2	2				5 days	7 days
Sycosis vulgaris	14	12	1	1		7 days	18 days

CHART 6

Local Application of Chloromycetin in the Treatment of Dermatoses
Conditions occasionally, partially, or temporarily improved

DISEASE	TOTAL CASES	GOOD RESULT	PARTIAL IMPROVE-MENT	TEMPORARY IMPROVE-MENT	NO IMPROVE-MENT	IMPROVED, NO FOLLOW-UP	NO FOLLOW-UP
Atopic dermatitis, infected	28		16			12	
Acne vulgaris	18			13	3	2	
Contact dermatitis, infected	39	5	27			4	3
Eczema, stasis type, infected	4		3		1		
Epidermophytosis, infected	18	2	15				1
Folliculitis	8			7	1		
Folliculitis decalvans	2		2				
Herpes simplex	4		1		1	1	1
Infectious eczematoid dermatitis	19		11	2	2		4
Insect bites, infected	3		3				
Intertrigo, infected	4		3	1			
Hidradenitis suppurative	2		2				
Infected wounds and desiccations	4		4				
Infant eczema, infected	18		13			2	3
Perleche	2		1		1		
Seborrheic dermatitis, infected	13		11				2
Traumatic ulcer, infected	3		2		1		
Stasis ulcer, infected	3		2		1		
Tinea kerion	4	2	1		1		

LOCAL APPLICATION OF CHLOROMYCETIN IN TREATMENT OF DERMATOSES

Method of Treatment

In the treatment of pyodermas or conditions complicated by secondary pyogenic infection, patients were instructed to remove the crusts or surface exudate with

warm water compresses twice daily prior to application of the ointment. In all other entities they were instructed to simply apply the ointment twice daily. The 1 per cent ointment was used in the treatment of 136 patients and the 2 per cent ointment in 414 patients. The 2 ointment bases used were similar in their constituents except for the fact that one contained 10 per cent mineral oil and the other contained 20 per cent. The results of treatment with these preparations have been grouped together in this report because there was no appreciable difference in the clinical results.

RESULTS OF LOCAL TREATMENT OF DERMATOSES WITH CHLOROMYCETIN

The results of the treatment of dermatoses with the local application of this drug may be divided into 3 categories:

1. Conditions definitely benefitted (chart 5)
2. Conditions occasionally, partially, or temporarily improved (chart 6)
3. Conditions not improved (chart 7)

CHART 7

Local Application of Chloromycetin in the Treatment of Dermatoses

Conditions not improved

DISEASE	TOTAL CASES	DISEASE	TOTAL CASES
Atopic dermatitis.....	18	Lupus erythematosus, chronic discoid.	2
Alopecia areata.....	3	Papular urticaria.....	2
Dermatitis venenata.....	10	Pruritus ani.....	5
Eczema, chronic lichenoid		Seborrheic dermatitis.....	10
(neurodermatitis).....	5	Tinea capitis.....	4
Eczema, perianal.....	5	Tinea versicolor.....	4
Epidermophytosis.....	7	Psoriasis.....	2

Chloromycetin ointment proved to be of definite value in the treatment of the pyodermas. Patients with impetigo contagiosa and ecthyma improved rapidly, with complete involution of lesions in from 4 to 16 days, depending on the severity of the condition. In all other conditions in which pyogenic organisms were primarily responsible for the eruption, similar results were obtained.

In many conditions such as eczematous eruptions, epidermophytosis, insect bites, intertrigo, wounds, seborrheic dermatitis, stasis ulcers, kerion, and contact dermatitis, where the primary dermatosis was complicated by secondary infection, chloromycetin ointment had no effect on the primary condition, but rapidly cleared the secondary infection. Some patients with pustular acne vulgaris had some temporary improvement while using the ointment, but the condition recurred when the application was stopped.

As noted in chart 7 there were many dermatoses in this series which did not respond to the local application of chloromycetin ointment.

ADVERSE REACTIONS TO LOCAL TREATMENT

Ten patients developed a mild contact dermatitis as a result of the local application of chloromycetin, and 5 developed a severe dermatitis. In all of these patients

positive patch tests to chloromycetin ointment and to chloromycetin were obtained. Control tests to the ointment base were negative.

COMMENT

Orally administered chloromycetin proved to be of value in the treatment of all conditions in which there was involvement by pyogenic organisms; in erythema multiforme; and in granuloma inguinale. It may be considered an adjunct in the therapy of acne vulgaris, and acne conglobata, but is by no means a definite curative measure, because in the vast majority of cases treated there was a relapse after the drug was discontinued. In 2 of these patients an interesting paradox occurred in that folliculitis developed while taking chloromycetin. Six of the 13 patients treated for herpes zoster appeared to be benefitted but 1 patient who was receiving treatment for folliculitis developed herpes simplex while taking the drug. Many conditions which were complicated by secondary infections such as, eczema, seborrheic dermatitis, epidermophytosis, and stasis ulcers were improved by the medication because the secondary infection was eradicated, but the primary disease remained.

Five of the 16 patients treated for chronic discoid lupus erythematosus improved but chloromycetin is not recommended in the treatment of this condition as a result of the development of severe leucopenia in 4 of the cases under observation.

Chloromycetin was of great value in the treatment of the pyodermas. In many conditions complicated by secondary infection, the preparation caused rapid eradication of the complicating pyoderma but had no effect on the primary condition. It proved to be of no help in the treatment of fungus infections. Fifteen patients developed contact dermatitis following the local application.

CONCLUSIONS

1. In this study 1013 patients were treated with chloromycetin. The antibiotic was administered orally to 463 patients and topically to 550.

2. The oral administration of chloromycetin proved of definite benefit in all conditions in which pyogenic organisms were the primary cause of the disease.

3. Chloromycetin proved to be of value in the treatment of secondary pyogenic invasion of dermatoses such as eczema, epidermophytosis, stasis ulcers, and seborrheic dermatitis but had no beneficial effect on the primary disease.

4. The lesions of granuloma inguinale healed rapidly following institution of treatment with oral chloromycetin, and no relapses have been noted.

5. The lesions, of erythema multiforme, responded to treatment with oral chloromycetin. Two relapses have been noted in the group of 39 cases treated.

6. Chloromycetin should be contraindicated in the treatment of chronic discoid lupus erythematosus, because of the development of leucopenia in 4 of 16 cases observed in this series.

7. Chloromycetin ointment both 1 per cent and 2 per cent caused rapid healing of pyogenic infections such as impetigo contagiosa, and ecthyma. It was also of value in the treatment of many skin eruptions complicated by secondary pyogenic infection, but had no beneficial effect on the basic dermatosis.

8. Fifteen patients treated with chloromycetin ointment developed a contact

sensitivity to the drug. Patch tests to chloromycetin powder were positive while those to the ointment base were negative.

BIBLIOGRAPHY

1. EHRLICH, J., BARTZ, Q. R., SMITH, R. M., JOSLYN, D. A., AND BURKHOLDER, P. R.: Chloromycetin, a new antibiotic from a soil actinomycete. *Science* **106**: 417, 1947.
2. SMITH, R. M., JOSLYN, D. A., GRUHZIT, O. M., MCLEAN, I. W., JR., PENNER, M. A., AND EHRLICH, J.: Chloromycetin: biological studies. *Jour. of Bacteriology* **55**: 425, 1948.
3. SMADEL, J. E., AND JACKSON, E. B.: Chloromycetin, an antibiotic with chemotherapeutic activity in experimental rickettsial and viral infections. *Science* **106**: 418, 1947.
4. SMADEL, J. E., LÉON, H. E., LEY, H. L., JR., AND VAVELA, G.: Chloromycetin in the treatment of patients with typhus fever. *Proc. Soc. Exper. Biol. and Med.* **68**: 12, 1948.
5. PAYNE, E. H., KNADT, J. A., AND PALACIOS, S.: Treatment of epidemic typhus with chloromycetin. *Jour. of Tropical Medicines and Hygiene* **51**: 68, 1948.
6. SMADEL, J. E., WOODWARD, T. E., LEY, H. L., JR., AND LEWTHWAITE, R.: Chloramphenicol (Chloromycetin) in the treatment of tsutsugamushi disease (Scrub Typhus). *Jour. of Clinical Investigation* **28**: 1196, 1949.
7. WOODWARD, T. E., SMADEL, J. E., LEY, H. L., JR., GREEN, R., AND MANKIKAR, D. S.: Preliminary report on the beneficial effect of chloromycetin in the treatment of typhoid fever. *Annals of Internal Medicine* **29**: 131, 1948.
8. WOODWARD, T. E., SMADEL, J. E., AND LEY, H. L., JR.: Chloramphenicol and other antibiotics in the treatment of typhoid fever and typhoid carriers. *Jour. of Clinical Investigation* **29**: 87, 1950.
9. PINCOFFS, M. C., GUY, E. G., LISTER, L. M., WOODWARD, T. E., AND SMADEL, J. E.: The treatment of rocky mountain spotted fever with chloromycetin. *Annals of Internal Medicine* **29**: 656, 1948.
10. ROBINSON, H. M., SR., AND ROBINSON, H. M., JR.: Studies on chloramphenicol in early syphilis and gonorrhea: preliminary report. *Southern Medical Jour.* **42**: 988, 1949.
11. ROBINSON, R. C. V., FOX, L. M., AND DUVAL, R. B.: Effect of chloramphenicol in early syphilis. *Am. Jour. of Syphilis, Gonorrhea, and Venereal Diseases* **33**: 509, 1949.
12. GREENBLATT, R. B., WAMMOCK, V. S., DIENST, R. B., AND WEST, R. M.: Chloromycetin in the therapy of granuloma inguinale. *Jour. Med. Assn. Georgia* **38**: 206, 1949.
13. ROBINSON, R. C. V.: Newer antibiotics in the treatment of venereal diseases. *Am. Jour. of Syphilis, Gonorrhea and Venereal Diseases* **34**: 273, 1950.
14. ZISES, MILTON, AND SMITH, G. C.: Nine cases of granuloma inguinale treated with chloromycetin. *Am. Jour. of Syphilis, Gonorrhea and Venereal Diseases* **35**: 294, 1951.
15. SHAW, C.: Failure of aureomycin and chloromycetin (Chloramphenicol) in dermatitis herpetiformis. *Jour. of Investigative Dermatology* **14**: 3, 1950.
16. JOHNSON, S. A. M., MEYER, O. O., BROWN, J. W., RASMUSSEN, A. F., JR.: Failure of chloramphenicol (Chloromycetin) in the treatment of three cases of lupus erythematosus disseminatus. *Jour. of Investigative Dermatology* **14**: 305, 1950.
17. ROBINSON, H. M.: Chloramphenicol (Chloromycetin) in the treatment of chronic discoid lupus erythematosus: preliminary report. *Jour. of Investigative Derm.* **14**: 309, 1950.
18. STORCK, H., AND RINDERKNECHT, P.: Significance of bacterial flora of skin in eczema measured by therapeutic action of aureomycin and chloramphenicol. *Dermatologica* **101**: 231, 1950.
19. BEINHAEUER, L. G.: Therapeutic value of chloramphenicol in a group of dermatoses of established or questionable virus etiology. *Archives Dermatology and Syphilology* **62**: 290, 1950.
20. CORNBLEET, THEODORE, AND SCHERR, H. C.: Chloromycetin for eczema and pruritus of the ear canal. *Archives Dermatology and Syphilology* **62**: 907, 1950.
21. DAWSON, L. M., AND SIMON, H. E.: Herpes zoster: treatment with chloramphenicol. *Southern Med. Jour.* **42**: 696, 1949.
22. WINTERTON, W.: Report of two cases of herpes zoster treated with chloromycetin. *Med. Jour. of Australia* **1**: 706, 1951.
23. NEWMAN, B. A., AND FELDMAN, F. F.: Treatment of pyogenic dermatoses with tropical chloramphenicol (Chloromycetin). *Archives of Dermatology and Syphilology* **64**: 212, 1951.

A TECHNICAL CONSIDERATION OF CARDIOPNEUMOPEXY— COMPARATIVE STUDY*

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In 1949, Carter et al. (1) published their experience with cardiopneumopexy accomplished by a modification of the technique introduced by Lezius 11 years previously. One of us (D. R.) devised a cardiopneumopexic operation that offered advantages over the methods used earlier (2). We believe that our technique allows a more free exchange between cardiopulmonary vessels because of removal of the pleuropericardial barriers from the united organs and minimal scarring between the adherent surfaces. The present work was undertaken to prove these contentions. A series of dogs was subjected to cardiopneumopexy by the Carter technique and our own. After lapses of comparative periods the cardiopneumopexies in both groups were observed for proximity of united hearts and lungs, density and thickness of interposed scar tissue, the capacity of the lung graft to protect the heart from the effects of ligation of the anterior descending branch of the left coronary artery, and gross estimation of hemorrhage from the lung tuft that remained after separating the pericardium and amputating the base of the lung graft. Electrocardiograms were taken on all animals at comparative stages of the experiments.

On the dogs in series "A" the operation was performed in the manner described by Carter.

Description of Operation—Series "A"

The animals were anesthetized with intravenous nembutal. Respiration was maintained by a mechanical respirator via an endotracheal tube. Strict aseptic technique was observed throughout the entire procedure. The thorax was opened through the left fourth interspace. The vagus nerve was identified and infiltrated with 1 per cent procaine. The left phrenic nerve was identified, mobilized, and retracted posteriorly. The prepericardial fat was retracted. Five cc. of 2 per cent procaine were introduced into the pericardial sac and several minutes allowed to elapse. The pericardial sac was then opened by an incision which extended superiorly to within 1 cm. of the left auricular appendage. Inferiorly the pericardial incision was extended to within 2.5 cm. of the apical tip. The anterior descending branch of the left coronary artery was identified and its midportion used as the center for a circular window 4–5 cm. in diameter which was made in the parietal pericardium. A physiologic need for collateral circulation was established by tying off 3 or 4 small coronary branches with fine silk ligature. Four or 5 interrupted everting mattress sutures were then placed between the medial cut edge of the pericardial window and the medial surface of the middle or lower lobes of the left lung. (The section of the lung selected was the one which would cover the defect in the pericardium with the least amount of tension.) Finely divided asbestos powder, mixed with sterile

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saline to form a paste, was then applied over the surfaces of the pleura and epicardium to be brought into apposition. The mattress sutures were secured and tied, the lung inflated, and closure of the incision in layers accomplished.

The procedure followed in the animals of series "B" was that reported by Reimann et al. (2).

Description of Operation—Series "B"

The dog was anesthetized by intravenous nembutal. Respiration was maintained by a mechanical respirator via an endotracheal tube. Strict aseptic technique was observed throughout the entire procedure. The thorax was opened through the fifth left interspace. The vagus nerve was identified and infiltrated with 1 per cent procaine. The phrenic nerve was identified, freed, and retracted posteriorly. Two "000" silk traction sutures were placed side by side in the lower pericardium anterior to the phrenic nerve. The prepericardial fat was dissected away from the incision site and the pericardium incised transversely. The distance from the apex of the heart to the coronary sulcus was measured and at least $\frac{1}{3}$ of this distance was arbitrarily chosen as the diameter of the graft. When possible, an area devoid of major coronary branches was selected as the graft site. The anterior border of the lower lobe of the left lung was then pulled out into the wound and grasped on its medial edge and reflected to the left over the fingers. A double edged razor blade was then held by a clamp and laid almost flat against the lung. By slicing back and forth, the serosa was removed with as little parenchyma as possible. Bleeding was minimal. Occasionally a small bronchiole was opened. The denuded lung area was covered with moist gauze and returned to the pleural cavity. The heart was again exposed and a traction suture of "0" silk was placed through the apex of the left ventricle. By gentle traction, it was possible to pull the heart out of the pericardial sac and support it with the fingers. The epicardium was separated from the myocardium by carefully inserting a 25 gauge needle immediately under the pericardium and raising it from the myocardium with physiologic saline solution. The desired area was enlarged by extending the dissection outward in all directions. The freed edges of the epicardium were trimmed away with dissecting scissors. As the dogs were presumed to be normal, a physiologic need for blood in the myocardium was produced by tying off 3 or 4 coronary twigs with fine silk ligatures. The lung lobe which had been stripped of its serosa was next pulled over to the heart by 6 equally separated "0000" silk sutures. Each suture was first placed in the edge of the lung serosa and then in the heart to pick up the freed edge of the epicardium. After the last suture was inserted, the sutures were drawn securely and tied. The heart was replaced in the pericardial sac and held in position by crossing the 2 pericardial traction sutures. This pulled the pericardium over the graft. The defect in the pericardium was partially repaired with a fine continuous silk suture taking care not to strangulate the graft pedicle. The lung was inflated and the chest closed in layers. Although we recognized the possible danger of stripping away coronary vessels with the epicardium, no untoward effects were observed if we took care to avoid the grossly visible vessels that were obviously important in nourishing the heart muscle. The danger of exciting abnormal rhythms by injecting saline while raising the epicardium was overcome by carefully

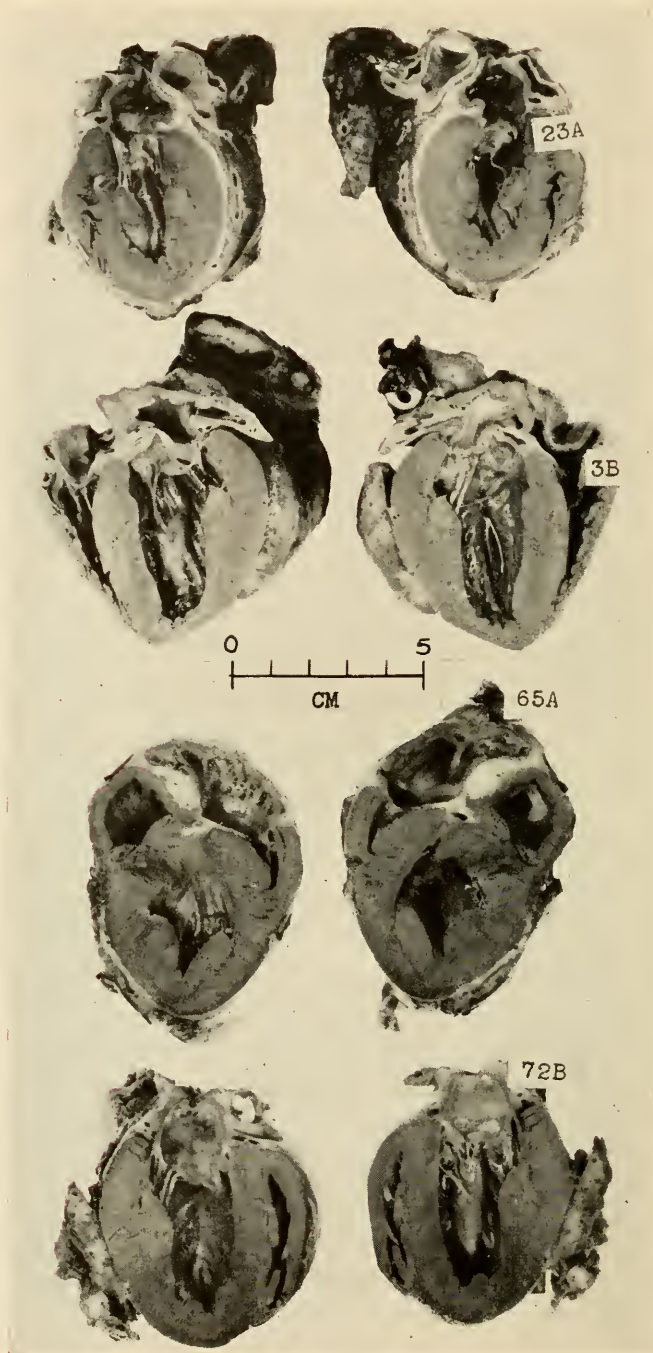


FIG. 1. Note dense fibrous tissue between heart and lung in 23-A and intimate union with relative absence of fibrous tissue in 3-B.

FIG. 2. Contrast fibrosis, tissue reaction, in series A and series B.

inserting the needle between the epicardium and myocardium. With this precaution, the muscle fibers were not subjected to compression or tense elongation. During the injection and stripping of the epicardium, there were no alarming changes of heart rate or rhythm.

Experimental Data

Dog 204-A: This animal underwent a type "A" cardiopneumopexy as described in series "A." Two tertiary twigs of the anterior descending branch of the left coronary were ligated to establish need. This animal recovered almost normal activity within 72 hours following the operative procedure. One notable exception was present in this and 2 other animals of the "A" series. The dogs limped noticeably on the left front paw for a period of 4 to 8 days. Ninety-seven days from the first operation the dog again was subjected to thoracotomy. Pleuro-pleural, pleuro-pericardial, and pleuro-diaphragmatic adhesions were present where the asbestos paste had escaped from the anastomotic site into the pleural cavity. Many of the adhesions were tenacious and the lung was freed with difficulty. The area of firm anastomosis measured 2 cm. by 1.5 cm. Small asbestos foreign body granulomata were noticed between the epicardium and the pleura. The anterior descending ramus of the left coronary artery was doubly ligated. The myocardium of the right ventricle became cyanotic with subsequent dilatation and loss of tone. There were no gross cardiac irregularities. The animal was observed for an additional 60 minute period. The area of cyanosis, although somewhat diminished in size, persisted. Force of contraction and myocardial tone remained poor.

Dog 203-B: A cardiopneumopexy of type "B" was performed on this animal without complication. A need for collateral circulation was established as in Dog 204-A. The animal recovered normal activity in 48 hours. One hundred and five days later a second thoracotomy was performed. There were a few firm pleuro-pleural adhesions at the previous incision site. The remainder of the lung with the exception of the graft site was free. Healing between the lung and myocardium was firm. The anastomotic site measured 4 cm. by 4.5 cm. Ligation of the anterior descending ramus of the left coronary artery was followed by a local zone of cyanosis and loss of tone. There was no general cardiac dilatation and gross arrhythmia did not develop. Cyanosis partially cleared at the end of a 20 minute observation period. This animal was closed without further operative procedure. During the 170 days following the second thoracotomy, this animal appeared to be perfectly normal. There was no decrease in exercise tolerance.

Dog 23-A: Type "A" cardiopneumopexy was performed without difficulty on this dog. Ninety-four days later a second thoracotomy was done. The findings were identical with those in Dog 204-A. Following ligation of the anterior descending branch of the left coronary artery, the anastomotic site was isolated and fluorescein was injected into the left pulmonary artery. The concentration of fluorescein was heavy in a few seconds at the site of the anastomosis. Direction of flow could not be determined. Ligation of the anterior descending branch of the left coronary artery produced a local area of cyanosis with left ventricular dilatation. The rhythm did not appear to be grossly affected. After a 20 minute observation period the left ventricle had regained a moderate amount of tone. The area of cyanosis persisted.

Dog 3-B: Type "B" cardiopneumopexy was performed on this animal with little difficulty. Ninety-four days later a second thoracotomy was carried out. Adhesions were present at the site of the old incision. The remainder of the pleural cavity was free of adhesions and the graft site was firm. During the operative procedure, the endotracheal tube inadvertently was dislodged and the animal died of asphyxia before the tube could be reinserted. There was time, however, to inject fluorescein



FIG. 3. Dog 66-A shows limited union of heart and lung. A minimal amount of asbestos paste was used in an attempt to limit widespread scarring reaction.

into the left pulmonary artery. The concentration of fluorescein was heavy at the anastomotic site. Again, direction of flow could not be determined.

Dog 65-A: This animal underwent a cardiopneumopexy of the "A" type. Exploration 101 days later showed organized adhesions throughout the left chest. The anastomosis was firm. The anterior descending branch of the left coronary artery was ligated. A local zone of cyanosis and loss of cardiac tone occurred immediately distal to the point of ligation. The heart rate increased by only 16 beats per minute and continued at that rate some 20 minutes later. The lung in the area of anastomosis was isolated from all possible sources of blood supply except that coming through the anastomotic site. The lung was cut away in a manner which left a tuft of lung

attached to the myocardium. The isolated lung tuft in the preparation showed only a slow capillary and venous ooze.

Dog 65-B: This dog was explored 103 days following a type "B" cardiopneumopexy. Adhesions were present only at the line of previous incision. Following ligation of the anterior descending branch of the left coronary artery, a local zone of cyanosis and loss of cardiac tone developed. The heart rate increased by 22 beats per minute and returned to its original rate 10 minutes later. Fifteen minutes following ligation, the zone of local cyanosis had cleared. Cardiac tone had partially returned. The isolated lung tuft showed active arterial and venous bleeding.

Dog 66-A: Ninety-two days following cardiopneumopexy with asbestos paste, this animal was again subjected to thoracotomy. Smaller amounts of asbestos paste had been used in an attempt to control the widespread formation of adhesions within the pleural cavity. There were few pleuro-pleural adhesions present. The site of firm anastomosis was somewhat smaller and not as firmly adherent as that of other animals in this series. Following ligation of the anterior descending branch of the left coronary artery, a large area of the ventricular wall became cyanotic and exhibited striking loss of tone. The cardiac rate increased from 180 beats per minute before ligation to 218 beats following ligation. Tachycardia remained during the 20 minute observation period. The heart and lung tuft preparation oozed very slightly. Reverse flow through the lung tuft was poor.

Dog 72-B: Thoracotomy was performed on this animal 103 days following direct lung-myocardial graft. Pleural adhesions were confined to the operative site. Ligation of the anterior descending branch of the left coronary artery produced a transient local loss of tone and cyanosis. The cardiac rate increased from 110 to 132 beats per minute following ligation. Ten minutes later, the cardiac rate was 120 per minute. The isolated lung tuft bled actively. Arterial, venous and capillary bleeding were observed.

CONCLUSIONS

1. The effectiveness of cardiopneumopexy is enhanced by the technique used in Series "B." In this method the epicardium and pleura are removed from the areas to be joined. By this preparatory step a more intimate union of heart and lung is achieved.

2. Scarring at the line of anastomosis is minimal since there is no need of foreign body or escharotic to induce adhesion of the apposed surfaces.

3. Collateral circulation between the heart and lung is more abundant in the absence of serosal or cicatricial barriers.

REFERENCES

1. CARTER, B. N., GOLL, E. A. AND WADSWORTH, C. L.: An experimental study of collateral coronary circulation produced by cardiopneumopexy. *Surg.* **25**: 489, 1949.
2. REIMANN, D. L., COWLEY, R. A. AND RABY, W. T.: An attempt to establish collateral circulation to the myocardium. *Bull. Sch. of Med. Univ. of Md.* **35**: 1, 1950.

CANCER DETECTION AND THERAPY

III. AFFINITY OF LYMPHATIC TISSUES FOR HEMATOPORPHYRIN*†

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AND FRANK H. J. FIGGE, Ph.D.

It was demonstrated by Auler and Banzer (1) that porphyrins have a tendency to concentrate in neoplastic tissues. Figge, Weiland, and Manganiello (2, 3) found that porphyrins tend to accumulate not only in neoplastic, but also in embryonic and traumatized tissues. At this time, it was observed by one of us (F. H. J. F.) that the lymph nodes also have an affinity for hematoporphyrin. This affinity of lymphoid tissues for porphyrin was so striking that experiments were planned to study this in more detail. It was realized that such a characteristic might be of practical value to facilitate the detection and removal of undesirable lymph nodes during operations on human subjects with cancer.

METHODS AND MATERIALS

The observations to be reported here are based on experiments involving 3 human subjects, 6 dogs, 2 rabbits, and 100 mice. The hematoporphyrin was injected intravenously into the human subjects, dogs, rabbits, and 10 mice. Ninety mice received the hematoporphyrin by either intraperitoneal or subcutaneous injections. The dogs received 20-100 mg. of hematoporphyrin. Two rabbits received 30 mg. of hematoporphyrin each. The 3 human subjects were given 30; 60; and 120 mg. of hematoporphyrin respectively. The mice received 0.5 to 10 mg. of hematoporphyrin per mouse.

Two of the 3 human subjects were examined by ultraviolet light in a darkened operating room. The cervical lymph nodes were removed from the third human and were examined in a dark room under an ultraviolet light. The dogs were examined 2 days after the first injection of hematoporphyrin. They were anesthetized with nembuto to produce surgical anesthesia, and efforts were made to simulate the conditions of the hospital operating room. The abdomen was opened with a midline incision, and the mesenteric, aortic, and lumbar lymph nodes were exposed and examined for fluorescence. This examination took place in an almost completely darkened room in a beam of near-ultraviolet black light (Figge (4)). The light was generated by a G.E. reflector spot quartz mercury-arc light, medical unit. Usually 2 or 3 such lights were used, in order to shorten exposure times for the photography of the fluorescence. Following examination of the abdominal lymph nodes, the femoral triangle and axillary regions were examined for fluorescent lymph nodes. In some of the dogs, a deep dissection of the neck was also performed, and the brain and spinal

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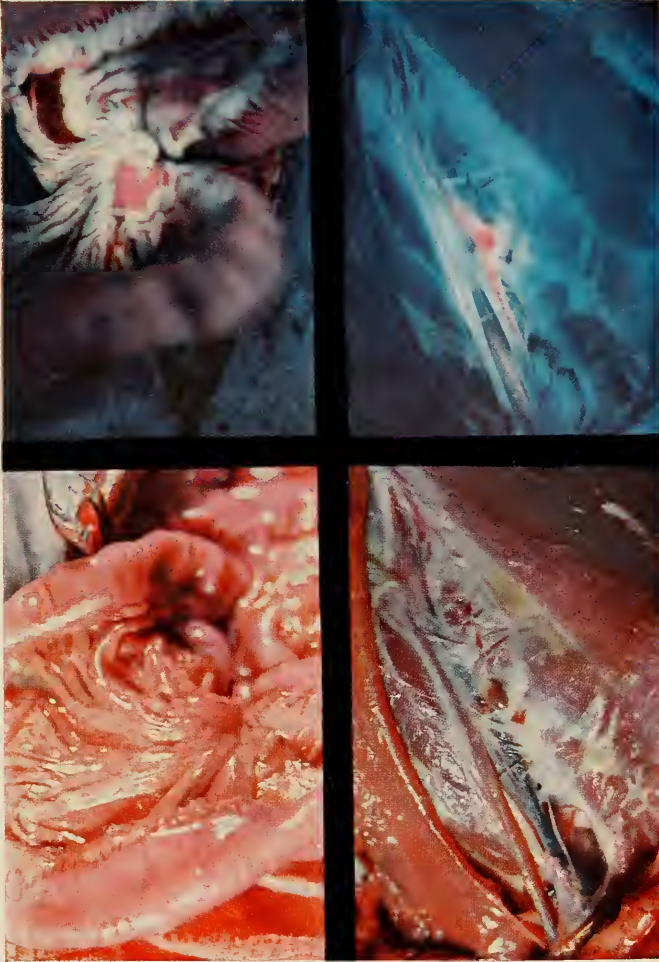


PLATE I

Lymph node in femoral triangle of dog. Photographed in artificial light (upper right).

Same as Figure 1. Note red fluorescent lymph node. Fluorescence photography—dark room, ultraviolet light (upper left).

Mesenteric lymph node of dog. Photographed in artificial light (lower right).

Same as Figure 3. Note red fluorescent lymph node. Fluorescence photography—dark room, ultraviolet light (lower left).



cord were examined. Approximately the same procedures were followed for the rabbits and mice.

The details of the photographic technique used have been described in previous papers (Figge and Clarke (5)). In brief, however, it has been found necessary to have an intense ultraviolet light source (usually one or more quartz mercury arcs emitting near-ultraviolet and visible light). Woods filters were placed in front of the mercury arcs to absorb the visible light. An orange-yellow filter was placed in front of the camera lens to exclude the ultraviolet light. This allows most of the visible light to pass through the camera lens to the film, but practically no ultraviolet light is transmitted. Only the visible light generated by the fluorescence of the object is thus recorded on the color film (See Plate I).

OBSERVATIONS

When mice were injected with more than 0.5 mg. of hematoporphyrin, almost the entire mouse became red fluorescent within an hour or two. It was noticed that the mice soon began to concentrate the porphyrin in the gall bladder. If mice were killed a few hours after injection, the gall bladder was usually seen as a very red fluorescent vesicle, and most of the tissues of the body were permeated with porphyrin and were, therefore, red fluorescent. After 24–48 hours, however, the porphyrin disappeared from most tissues but persisted in the lymph nodes. The lymph nodes therefore stood out as small red fluorescent globules in yellow fluorescent fat and were very conspicuous. While the observations in this present work were based on 100 mice, similar observations had been made on approximately 300 mice in experiments which preceded this.

In each of the dogs, it was found that hematoporphyrin accumulated in the lymph nodes and lymph vessels throughout the body of the animal. It was found that in the animals which received 80 and 100 mg. of hematoporphyrin, lymph nodes were much more fluorescent than in the animals which had received 20 or 60 mg. In one of the dogs in which 100 mg. of hematoporphyrin was given, it was found, upon deep dissection of the neck, that the tonsils were very red fluorescent. Characteristic observations are shown in Figures 1, 2, 3, and 4 of Plate I. A lymph node in the femoral triangle of a dog was photographed in visible light (Fig. 1). The node appeared as a small, dark, brown mass in the lighter colored fascia and fat. The accumulation of porphyrin in such a lymph node makes it more conspicuous, even in visible light. The same lymph node was photographed in near ultraviolet light (Fig. 2). The node appeared as a very conspicuous red fluorescent globular mass. While the afferent and efferent lymph vessels were not so conspicuous to the eye at the time of the examination, they appeared as red fluorescent lines in the photograph. The fascia had a bluish-white fluorescence, which was in contrast to the red fluorescent lymph node. A photograph of a mesenteric lymph node was taken in artificial visible light (Fig. 3). The node was embedded in fat and not easily seen. When photographed in ultraviolet light (Fig. 4), it stood out as a red fluorescent mass against a relatively dark but non-fluorescent background. In general, mesenteric lymph nodes became conspicuous because of their red fluorescence. The yellow fluorescent fat which surrounds them sometimes facilitates detection of nodes. The observations, with respect to lymph nodes in rabbits, were very much similar to those in dogs.

Thus far, we have not been able to duplicate these results and observations in human subjects. The first patient, in which this fluorescence method for detection of lymph nodes was used, had a pharyngeal tumor and therefore was scheduled for a deep dissection of the neck. He was injected with 30 mg. of hematoporphyrin 24 hours before the operation. During the operation, no red fluorescent lymph nodes could be detected. None of the lymph nodes appeared red fluorescent on removal at the time of operation or when examined in the dark room later. The next patient received 60 mg. of hematoporphyrin with almost identical results. The nodes were not red fluorescent and therefore appeared to contain no hematoporphyrin. It was thought that the dosage was not sufficiently high, so the third patient was given 120 mg. of hematoporphyrin over a period of 2 days preceding the operation. The operation was a deep dissection of the neck. During the surgery, a relatively large amount of tissue containing numerous nodes was removed. These lymph nodes were not red fluorescent and therefore not conspicuous when examined in near-ultraviolet light. In this patient, it was thought that the dosage (120 mg.) was sufficiently high to achieve results comparable to those observed in animals. Careful checking of the records of these patients revealed that all had received intensive roentgen radiation to the involved regions. It is well known that local roentgen radiation inhibits mitotic activity and growth in all tissues (Brunst, Barnett, Figge (6, 7, 8, 9)). The possibility that the roentgen radiation might have suppressed or destroyed the affinity of the lymphatic tissue for the porphyrin was then considered. Further investigation of this possibility is in progress.

SUMMARY AND CONCLUSION

When adequate amounts of hematoporphyrin were injected into mice, rabbits, and dogs, the lymph nodes appeared more brilliantly red fluorescent than surrounding tissues. This procedure thus constitutes a method for detection of lymph nodes. It may eventually be a desirable procedure for the detection and removal of undesirable lymph nodes during surgery on human subjects affected with cancer.

Thus far, however, it has not been possible to duplicate our results with animals on roentgen irradiated human subjects. In the course of this investigation, it became apparent that many parts of the lymphatic system besides the lymph nodes could be demonstrated by means of this technique. Lymph in the lymph vessels also appears to become red fluorescent so that afferent and efferent lymph vessels may be readily seen on photographs, even though they are not visible to the naked eye. Larger vessels, particularly the cisterna chyli and the thoracic duct may be seen directly.

REFERENCES

1. AULER, H. AND BANZER, G.: Untersuchungen über die Rolle der Porphyrine bei Geschwulstkranken Menschen und Tieren. *Z. Krebsforsch.*, **53**: 65-68, 1942.
2. FIGGE, F. H. J.; WEILAND, G. S.; AND MANGANIELLO, L. O. J.: Cancer detection and therapy. Affinity of neoplastic, embryonic, and traumatized tissues for porphyrins and metalloporphyrins. *Proc. Soc. Exp. Biol. and Med.*, **68**: 640-641, 1948.
3. MANGANIELLO, L. O. J. AND FIGGE, F. H. J.: Cancer detection and therapy. II. Methods of preparation and biological effects of Metallo-Porphyrins. *Bull. Sch. of Med., Univ. of Md.*, **36**: 3-7, 1951.

4. FIGGE, F. H. J.: Near-ultraviolet rays and fluorescence phenomena as aids to discovery and diagnosis in medicine. *Bull. Sch. of Med., Univ. of Md.*, **26**: 165-176, 1942.
5. FIGGE, F. H. J. AND CLARKE, C. D.: The basic technique of kodachrome photography of fluorescence phenomena. *J. of Lab. & Clin. Med.*, **27**: 1606-1610, 1942.
6. BRUNST, V. V.; BARNETT, D. J. AND FIGGE, F. H. J.: The effect of local x-ray irradiation upon the development of various parts of the body of the young mouse. *Cancer Res.*, **10**: 206, 1950.
7. BRUNST, V. V.; SHEREMETIEVA-BRUNST, E. A. AND FIGGE, F. H. J.: The effect of local x-ray irradiation upon the teeth and surrounding tissues in young axolotls (*Siredon mexicanum*). *J. Dental Res.*, **31**: 609-619, 1952.
8. BRUNST, V. V.; SHEREMETIEVA-BRUNST, E. A. AND FIGGE, F. H. J.: Influence of local x-ray treatment on development of jaws in young axolotl (*Siredon mexicanum*). *Proc. Soc. Exp. Biol. and Med.*, **79**: 401-403, 1952.
9. BRUNST, V. V. AND FIGGE, F. H. J.: Age sensitivity of the spinal cord of the mouse to local x-ray irradiation. *Anat. Rec.*, 112, No. 2, Feb., 1952.

GASTRIC RESECTION IN THE TREATMENT OF DUODENAL AND GASTRIC ULCERS*

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At the Baltimore City Hospitals, from January 1, 1936 to December 31, 1948, 84 patients were subjected to subtotal gastric resection for duodenal and gastric ulcers. Twenty private patients were operated upon by one of the authors (O. C. B.) at other hospitals, giving a series of 104 cases of subtotal gastric resections.

The indications for resection in this series were hemorrhage, obstruction, intractability, and threat of malignancy (1, 8). In addition to these indications, the patient who was not able to follow a satisfactory medical regime was considered a candidate for resection. The latter group had symptoms severe enough to warrant hospitalization and had usually been admitted because of ulcer symptoms, on more than one occasion.

In general, the diagnosis of the roentgenologists was accurate. Of the 83 patients on whom a gastrointestinal series was done preoperatively, there were 71 diagnoses of peptic ulcer, 7 of carcinoma, 3 of pyloric obstruction, and 2 of normal gastrointestinal series. Two cases of duodenal ulcer were diagnosed as carcinoma of the stomach preoperatively. The gastrointestinal series of 1 patient showed a definite filling defect of the stomach. During surgery many adhesions were found about the duodenum and lesser curvature of the stomach. The 21 patients who did not have a gastrointestinal series were among those with gastric bleeding.

Twenty-nine subtotal gastrectomies were performed because of bleeding. A definite effort was made to raise the hemoglobin level above 12 grams before surgery by multiple transfusions, but this was not possible in all patients. Thirteen were operated on because of obstruction. This group presented the greatest nutritional problem before surgery. Several were emaciated. One negro male weighed only 104 pounds. He was refused surgery elsewhere on the assumption that he had an inoperable malignancy. It is difficult to keep a patient in positive caloric and nitrogen balance by intravenous feedings over a long period of time. These were given plasma, blood, glucose, vitamins and amino acid preparations intravenously. Protein concentrates were administered by gastric tube when pyloric obstruction was not complete. Feedings often were alternated with suction. Suction drainage was used as indicated for at least 12 hours preoperatively in every instance. In none was a preoperative jejunostomy required because of pyloric obstruction. The nutritional status of every patient suffering from an ulcer who had been on a special diet for weeks or longer was carefully evaluated before surgery.

Of the 104 patients 60 were treated by the Polya type of subtotal gastric resection. A Hoffmeister-Finister operation was done on 44. An antecolic gastrojejunostomy without entero-enterostomy was used in all but a few operations. Drainage of the duodenal stump area rarely was employed. The exclusion type of resection was not used. All were high resections that removed about two-thirds of the stomach.

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The most common postoperative complications encountered were pneumonia, pulmonary atelectasis, wound infection, jaundice, nausea, and vomiting. A few days after surgery three or four patients developed jaundice which persisted for approximately 7 days. The cause of jaundice was not determined. Several patients developed severe nausea and vomiting from 3 to 10 days postoperatively. All of these were relieved by a few days of gastric suction drainage. One patient has had similar attacks of nausea and vomiting 4 and 9 months postoperatively without evidence of abdominal distention or intestinal obstruction. Each time he has been relieved by 24 to 48 hours of suction drainage of the stomach. One patient developed obstruction of the jejunum distal to the gastrojejunal anastomosis and was relieved by surgery 21 days after the gastric resection.

CHART I
Mortality Rate and Causes of Death

	1936-41	1942-48
Total number of cases.....	35	69
Number of patients that died in less than 3 months.....	7	4
Mortality rate.....	20%	5.8%
<i>Causes of Death*</i>		
Pneumonia.....	5	1
Gastrointestinal bleeding.....	2	0
Lung abscess.....	1	0
Pulmonary infarction.....	1	0
Atelectasis.....	0	1
Cardiac failure.....	0	1
Leakage of duodenal stump.....	0	1
Generalized peritonitis.....	0	1
Shock.....	1	2
Evisceration.....	1	0
Intestinal obstruction.....	1	0
Mesenteric thrombosis.....	0	1

* Since some patients had more than one postoperative complication the number is greater than the number of deaths.

The mortality rate has been reduced since the advent of penicillin, sulfa drugs, and the more liberal use of whole blood transfusions (Chart I). Of the 4 deaths since 1941 3 were in the preoperative bleeding group. The other patient was an extremely obese 63 year old white male who died of pneumonia on the second postoperative day in spite of penicillin and supportive therapy. One death was caused by gangrene of the duodenum, with leakage and generalized peritonitis. This patient developed signs of peritonitis on the fourth postoperative day. An exploratory examination was made but the gangrenous duodenum could not be closed. He died 24 hours later.

The incidence of gastric resection of white to negro patients was 72 to 32 (Chart II). It will be noted that in this small series there is no great preponderance in the Caucasian race as is usually found. In a report by DeBailey on 211 patients with perforated ulcers at Charity Hospital, New Orleans, the race incidence (3) was 60.6 per cent white and 39.3 per cent negro.

The sex incidence was 87 men to 17 women, or a proportion of 5 men to one woman (Chart II). Bachus (2) reported patients with duodenal ulcers showed a ratio of 4.2 to 1 and his patients with gastric ulcer had a ratio of 2.1 to 1. In 1940 DeBakey (3) reported an incidence of 92.2 per cent males in a collected series of 14,339 acute perforated ulcers.

The age incidence in this series was about the same for duodenal as for gastric ulcers (Chart III). In most reported series gastric ulcers are found to occur in a later age group than duodenal ulcer. In the series of 105 gastric ulcers reported by Marshall and Welch (6) 70 of the patients were between 40 and 59 years. In a collected series of 6,875 patients reported by DeBakey (3) there was an incidence of 23.7 per cent in the third decade, 27.5 per cent in the fourth and 22.3 per cent in the fifth, with only 22 per cent in patients over 50 years of age.

CHART II
Color and Sex

COLOR AND SEX	DUODENAL ULCER	GASTRIC ULCER	TOTAL
White.....	38	34	72
Negro.....	19	13	32
Male.....	48	39	87
Female.....	9	8	17

CHART III
Age of Patients

AGE AT OPERATION	DUODENAL ULCER	GASTRIC ULCER	TOTAL
20-29.....	9	5	14
30-39.....	6	9	15
40-49.....	14	10	24
50-59.....	14	16	30
60-69.....	10	6	16
70-79.....	4	1	5

Thirty-one patients in this series had symptoms for one year or less. Forty-one had symptoms for from one to 5 years and 32 had symptoms for over 5 years (Chart IV). In the series reported by Marshall and Welch (6) 74 of the 105 with gastric ulcers had symptoms for over 3 years.

Nausea and vomiting that occurred on several days postoperatively and were relieved by suction drainage, may have been caused by obstruction of the afferent outlet of the gastrojejunostomy from turning in too much jejunum and stomach at the anastomosis, as described by Wagensteen (10), or from edema at the site of anastomosis. There was no definite evidence of hypoproteinemia. In the patient who had late recurrent attacks of nausea and vomiting there may have been too much tissue turned in at the anastomosis which survived as a spur, or he may have had an adhesion high in the jejunum that produces symptoms of obstruction. The symptoms subsided so quickly that exploration did not seem justified and a gastrointestinal series was not helpful in making a diagnosis.

The duodenal gangrene which resulted in the death of one patient probably resulted from obstruction of the efferent loop of the gastrojejunostomy from turning in too much tissue in the anastomosis, from edema, or from angulation or adhesions. An autopsy was not obtained on this patient but examination in a limited manner was possible during surgery. This condition has been adequately described by Wangenstein (10). Dragstedt and associates (4) have shown that the circulation in the duodenum and jejunum is more vulnerable to intraluminal pressures than the rest of the bowel. When there is obstruction of the efferent loop, the duodenum and

CHART IV
Duration of Symptoms Before Operation

DURATION OF SYMPTOMS	NUMBER OF CASES DUODENAL ULCER	NUMBER OF CASES GASTRIC ULCER
Less than 2 months.....	8	5
2-6 months.....	7	5
Over 6 months-1 year.....	4	2
Over 1 year-5 years.....	18	23
Over 5 years-10 years.....	10	5
Over 10 years.....	10	7

CHART V
Postoperative Follow-Up Study

PERIOD OF FOLLOW-UP	NUMBER CASES	PATIENTS WITH GOOD RESULTS	PATIENTS WITH PERSISTENT SYMPTOMS	ROENTGENOGRAPHIC EVIDENCE OF POSTOPERATIVE LESION
Less than 2 months.....	25	25	0	
2-6 months.....	24	22	2	
6 months-1 year.....	16	15	1	
1-2 years.....	14	12	2	
2-3 years.....	2	2	0	
3-5 years.....	5	4	1	1
5-7 years.....	2	2		
7-10 years.....	5	3	2	1
Total.....	94	85	9	2

jejunum are converted into a closed loop and intraluminal pressures develop which will impair the circulation to the duodenum (4, 9, 10). In spite of statements to the contrary, the duodenum has a rich blood supply that can be demonstrated easily in the anatomic laboratory. It seems impossible that an operative accident to any one artery could have caused duodenal gangrene in the patient.

A long follow-up period has not been possible in this series. Of those that survived the operation, 90 per cent had good results, or 81.7 per cent of all cases (Chart V). As the follow-up period grows longer, the results undoubtedly will be less satisfactory. Two patients have had roentgenographic evidence of marginal ulceration following resection. A vagotomy has recently been performed in one of these cases. The patient was found to have an inflammatory mass involving the gastrojejunal anastomosis and transverse colon. This patient was one of the few that had a retrocolic gastro-

jejunostomy. There was no evidence of a gastrojejunal fistula and it was hoped the lesion would heal following the vagotomy.

The patients with bleeding ulcers proved to be the greatest problem in this series. It should be noted that 3 out of the 4 deaths since 1941 were in patients with bleeding ulcers. It is extremely difficult to make a correct diagnosis in cases with massive upper gastrointestinal hemorrhage. The 2 important questions are, what is the source of the bleeding, and will it stop spontaneously? If peptic ulcer has been definitely diagnosed previous to bleeding, or if the patient gives a history typical of ulcer and there is no evidence of cirrhosis of the liver, the answer to the first question is rather evident. When the patient gives no history suggestive of ulcer the diagnosis may be difficult. If possible, the cause of the bleeding should be determined before surgery is performed. Other causes to be considered are carcinoma of the stomach, benign lesions of the stomach and duodenum, acute gastritis, esophageal or gastric varices, and blood dyscrasias. In many with massive gastrointestinal bleeding the source of the hemorrhage cannot be located at the time of exploration. The work-up, if possible, should include reports on the bleeding time, clotting time, prothrombin time, albumin globulin ratio, and the various liver function studies. If such a study is feasible it will rule out esophageal varices caused by cirrhosis of the liver. An upper gastrointestinal series may be made provided it is carried out with a minimum of palpation. Under these circumstances the roentgenologist may not be satisfied with his examination, nevertheless, valuable information may be obtained. The presence of blood clots in the stomach makes the examination more difficult. If the cause of the bleeding has not been demonstrated with the above studies, an esophagoscopy and gastroscopy may be performed during a nonbleeding phase. Whether the patient will spontaneously stop bleeding is for the most part left to chance.

In an old patient who has had previous attacks of bleeding, or who has a long history of ulcer and a heavily scarred duodenum, the bleeding may not stop spontaneously. Younger patients more often cease bleeding spontaneously. There are many other factors involved and it is difficult to predict in the individual patient whether the bleeding will cease spontaneously. Frequent hemoglobin and hematocrit determinations often will permit better judgment as to whether the bleeding is abating. When it is thought that bleeding will not stop, an operation should be done promptly if whole blood is available in sufficient quantities.

Blood should be replaced slowly by transfusion as it is lost. If it is not replaced, the blood volume will be restored partly by the passage of interstitial fluid into the vascular system. In case the blood loss has not been too rapid the patient will thus maintain a normal blood pressure. Eventually he will develop a definite lowering of his hemoglobin level. After a few days he will be too weak to stand the stress and strain of an operative procedure, should it become necessary. One should not expect a patient who is definitely anemic from chronic blood loss to return to an apparently normal state within a few hours following transfusion. There is no proof that patients will stop bleeding any sooner if they are allowed to partially exsanguinate than if their blood volume has been maintained by transfusions given slowly.

All physicians do not agree on feeding the patient with a bleeding ulcer of the stomach. Heuer (5) withholds food from his severe bleeders for fear the food particles

will dislodge the blood clot from the ulcer bed. On the other hand, Meulengracht (7) prescribes food for his bleeding patients. He believes that a full stomach contracts less than an empty one. In this series the bleeding patients have been given 6 small feedings a day. The food consists of pureed vegetables and fruit, eggs, custards, milk, bread and ground meats, which is similar to the diet recommended by Meulengracht (7).

In the group of patients with pyloric obstruction, a definite effort should be made to determine whether the obstruction is caused by spasm or edema in the region of the pylorus, antrum and duodenum, or if the obstruction is secondary to scar formation. If attributable to spasm and edema the condition may be treated successfully with suction drainage alternated with tube feedings according to the technic of Wilkinson (11, 12). If not relieved in 72 hours, the obstruction must be caused principally by scar formation. In the case of true obstruction with emaciation, the patient's nutritional status should be improved by intravenous therapy as much as possible before surgery.

CONCLUSIONS

A review of 104 patients with subtotal gastric resection for peptic ulcer is reported.

When medical treatment of peptic ulcer fails, subtotal gastric resection is the best method of treatment now available.

BIBLIOGRAPHY

1. BALFOUR, DONALD C.: Textbook of surgery, by Christopher, W. B. Saunders Co., Philadelphia, ed. 4, p. 974, 1945.
2. BOCHUS, HENRY L.: Gastro-Enterology, W. B. Saunders Co., Philadelphia, p. 364, 1944.
3. DEBAKEY, M.: Acute perforated gastroduodenal ulceration: A Statistical Analysis and Review of the Literature. *Surgery* **8**: 852-884 and 1028-1076, Nov., 1940.
4. DRAGSTEDT, C. A., LANG, V. F., AND MILLIT, R. F.: The relative effects of distention on different portions of the intestine. *Arch. Surg.* **18**: 2257-2263, 1929.
5. HEUER, GEORGE J.: The treatment of peptic ulcer. J. B. Lippincott Co., Philadelphia, 1944.
6. MARSHALL, SAMUEL F., AND WELCH, MARK L.: Results of surgical treatment for gastric ulcer. *J. A. M. A.* **136**: 748-752, March 13, 1948.
7. MEULENGRACHT, E.: Fifteen years of experience with free feeding of patients with bleeding peptic ulcers; fatal cases. *Arch. Int. Med.* **80**: 697-708, Dec., 1947.
8. MOORE, FRANCIS B.: Current practices in the surgical treatment of ulcer. *Surg. Clin. N. America*; **27**: 1071, Oct., 1947.
9. OWINGS, J. C., MCINTOSH, C. A., STONE, H. B., AND WEINBERG, J. A.: Intra-intestinal pressure in obstruction. *Arch. Surg.* **17**: 507-520, 1928.
10. WANGENSTEEN, OWEN H.: Medico-surgical tributes to Harold Brunn. University of California Press, 551-562, 1942.
11. WILKINSON, S. A.: The obstructed peptic ulcer. *Am. J. Digest. Dis.* **9**: 321-327, Oct., 1942.
12. WILKINSON, S. A.: Present status of the peptic ulcer problem. *J. A. M. A.* **138**: 805-807, Nov. 13, 1948.

BLEEDING FOLLOWING TONSILLECTOMY AND ADENOIDECTOMY*†

SAMUEL L. FOX, M.D.‡

Tonsillectomy is undoubtedly the most frequent operation in modern surgery. In spite of the many advances made in anesthesia, in fluid and electrolyte physiology, and in surgical technique, the one great unconquered hazard of tonsillectomy is bleeding.

An analysis of this bleeding leads us to the classification of primary bleeding and secondary (late) bleeding. Primary bleeding occurs within the first 24 to 48 hours postoperatively, while secondary bleeding occurs thereafter and up to 10 days postoperatively. The causes and management of primary bleeding and of secondary bleeding are different and unrelated.

PRIMARY BLEEDING

Primary bleeding, in the majority of cases, results from inadequate surgical hemostasis at the time of operation, or to the loss of a ligature from the throat during the reaction period or soon thereafter. Also, it may be some constitutional disorder which interferes with the proper clotting of blood. The first 2 are almost always caused by faulty surgical technique, and the last named may be obviated by a proper pre-operative history and laboratory examination of the patient.

Upon admission of the patient to the hospital, an attempt is made to determine if there is a history of abnormal bleeding following minor injuries, and if there are familial tendencies toward bleeding. In cases with positive or suggestive findings in the history, immediate and adequate blood studies are carried out (bleeding time, coagulation time, prothrombin time, platelet count, etc., as indicated), and prophylactic measures are instituted as needed in order to correct blood abnormalities before proceeding with the operation. In the absence of such positive history, the routine pre-operative determination of the hemoglobin content (or hematocrit), the white blood cell count (including a differential count) and the examination of the first morning urine specimen is considered adequate. We have found little value in making routine bleeding and clotting time determinations, and have discontinued them except when indicated.

Sharp dissection with the Seiler knife and tonsil scissors is preferred. However it makes little difference whether sharp dissection is employed or whether a Sluder, Beck, or other mechanical device is used. The *clean* removal of all accessible tissue with the least amount of trauma is most important. Complete hemostasis should be established in every case, if primary bleeding is to be avoided some hours after the patient has been returned to his room. For this purpose, #0 plain catgut free ligatures are preferred whenever possible. If the muscle has been inadvertently exposed, or the facial tissues are friable or fibrosed and do not retain free ligatures

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† From the Department of Otolaryngology of the University of Maryland School of Medicine.

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well, then suturing is carried out with #0 catgut. This is used on atraumatic curved round needles, with a specially designed needle holder.* Figure of 8 sutures are placed about each bleeding point or area. Patients are not permitted to leave the operating table until their fossas are absolutely dry, as determined by the use of a mechanical tonsil suction aspirator in each fossa. This insures against bleeding which might result from slight trauma post-operatively. Thrombin solution is occasionally employed topically to control excessive oozing from muscles or torn fascias. Chemical caustics and astringents are never used as these may lead to later bleeding.

The Beckman or Barnhill adenoid curettes are preferred to the adenotomes. The central mass is removed with a large curette. Smaller curettes are employed on each side for complete removal of the tissue situated laterally. Care must be exercised not to injure the posterior nasal septum or troublesome bleeding will result. It is also imperative to remove all remnants of adenoid tissue as cut portions and incompletely removed adenoid tissue are probably the commonest cause of annoying postoperative bleeding from the nasopharynx. Another site of possible bleeding is the cut surface of the pharyngeal mucosa just behind the free margin of the soft palate. This is easily controlled by the ligature methods described previously. If bleeding persists and palpation of the nasopharynx reveals that all tissue has been clearly removed, it is expedient to insert a nasopharyngeal pack, with a string attached, to be removed several hours later at the bedside. Thrombin solution may be employed topically before inserting such a pack.

SECONDARY BLEEDING

Predisposing factors and causes for secondary hemorrhage include acute febrile diseases occurring during convalescence; dietary deficiencies, particularly vitamins and proteins; hypertension; local infection; local trauma; blood dyscrasias; and certain drugs, notably aspirin, administered either locally or systemically during the convalescence.

In order to understand the problem of secondary tonsillar bleeding, a review of the pathology of wound healing by secondary intention is worth consideration. In adenotonsillectomy, a sizeable area is left raw and uncovered. This soon becomes infected superficially by the invasion of the normal bacterial flora of the mouth and throat. The reaction to this invasion, plus the normal hemorrhagic and serous exudation which occurs on such a raw surface, produces a crust which finally covers the entire surface of the wounds. The crust is continually under stress and strain by the normal movements of the regional muscles. Within 24 to 48 hours, granulation tissue begins to form beneath the crust. This tissue grows from below upward, a process requiring, as a rule, from 5 to 8 days. Mucous membrane usually grows beneath the crust at a somewhat slower pace. Displacement of the crust results. As the crust slowly disintegrates and becomes dislodged, the granulation tissue is often exposed. Since this tissue is highly vascular, trauma from food bolus, or movements of the tongue or regional muscles, may produce hemorrhage. This is particularly true if the crust is dislodged prematurely. The possibility of bleeding from this area is

* Supplied by Geo. P. Pilling Sons Co. (Philadelphia)

reduced accordingly as the mucous membrane slowly proliferates to cover this granulating surface.

Attempts to produce healing *per primum* by sewing together the pillars, or by suturing the superior plica across the fossa, have failed because the sutures are soon torn out by the movements of the pharyngeal muscles. During the interim, before the tissues become torn apart following such suturing, the patient suffers severe pain in swallowing or talking.

It becomes obvious that every attempt should be made to control acute febrile diseases, local infection, hypertension, and blood dyscrasias, and to avoid local trauma during convalescence. For this purpose detailed printed instructions are provided for patients and parents. It is also important that patients obtain all necessary elements of diet, and avoid any harmful drugs or measures during convalescence.

Vitamin C has been shown to be important in promoting normal wound healing. A marked deficiency in vitamin C causes a lack of intercellular substance and capillary formation in wounds. Vitamin C is recommended for patients suspected of suffering such a deficiency and also for those in whom healing of the fossae seems to be unduly delayed. However, it is not employed routinely as most private patients have an adequate vitamin C plasma level preoperatively and will ingest adequate amounts in the recommended postoperative diet lists supplied them. In addition, the vitamin must be given continuously for several days before any effect is noted. In indicated cases administration should be started well in advance of surgery.

Vitamin P has been found to be of value in certain cases of hemorrhage caused by increased capillary fragility. However, the response to continuous oral administration of vitamin P becomes manifest only after 2 or 3 weeks. Therefore, this vitamin would be of little value in preventing late tonsillar hemorrhage unless it were administered several weeks in advance of surgery. In addition, capillary fragility is rarely a factor in late tonsillar bleeding. It can usually be suspected by the history and its existence established by pre-operative tests.

An adequate protein intake is essential for normal convalescence and wound healing. It has been clearly demonstrated that nitrogen catabolism is considerably increased after surgery, fractures or trauma. In hyperpyrexia, both an increased protein catabolism and an increased vitamin C catabolism become manifest. It is therefore essential that a daily minimum of 1 gram of protein per kilogram of body weight be obtained throughout convalescence in order to maintain the patient in a state of positive protein balance.

Much emphasis has been placed on the role of aspirin in the production of late tonsillar hemorrhage in the past few years. Some researchers have attributed the relatively high incidence of late tonsillar bleeding, universally acknowledged to be about 10 per cent, to a prothrombinemia induced by post-operative ingestion of salicylates. Efforts have been made to control this bleeding by the administration of vitamins K and C, in an effort to maintain a normal prothrombin level. It has never been substantiated that such a prothrombinemia occurs in cases with late bleeding. In our own experience with late bleeding, evidence of prothrombinemia could not be demonstrated. This has also been the experience of other workers.

We concede that the simultaneous administration of vitamin K, either alone or

supplemented by vitamin C, will protect normal individuals who take large doses of salicylate, against a prothrombinemia. However, the average patient does not ingest sufficient salicylate after tonsillectomy to produce a significant alteration in the prothrombin level. Accordingly, vitamin K is not prescribed except in cases known to be taking such drugs as dicumarol, or otherwise found to have a lowered prothrombin level. In such cases, vitamin K administration is begun well in advance of surgery. This is a safeguard against capillary bleeding of primary as well as secondary types.

On the other hand, since most patients employ aspirin chewing gum freely during postoperative periods, salicylate may have an adverse local effect on wounds. It has been clearly demonstrated that when saliva and blood are mixed, the coagulation time is shortened. A mixture of saliva, blood and aspirin solution, on the other hand, definitely hinders blood coagulation. Other such strongly acid solutions produce similar effects. This probably explains, to some degree, the adverse effect of aspirin chewing gum on post-tonsillectomy wounds.

TABLE 1
Secondary (Late) Hemorrhage

GROUP	NO. CASES	NO. CASES OF BLEEDING	PERCENTAGE OF BLEEDING
I	252	25	9.9
II	128	13	10.1
III	184	2	1.1
IV	594	8	1.3
V	474	5	1.0

When aspirin is dissolved in saliva, as by chewing aspirin gum, hydrolysis of the compound is quickly effected and free salicylic acid is liberated. This, in turn, affects the integrity of the coagulum, digesting and loosening it prematurely. The exposed granulating surface is further subjected by the salicylate-containing saliva to a prolongation of the coagulation time of its exposed capillaries. Hemorrhage is thus induced and sustained.

OUR SERIES

In an effort to determine what factors are most important in the production and avoidance of late tonsillar bleeding, an extensive study was undertaken in which the aggregate number of cases studied now totals 1,632. All were operated upon by the same method as described previously, and the postoperative management was guided by the same set of printed instructions. The only variations were those instituted for each group, as indicated below. This was done to study a particular problem in the cause of late tonsillar bleeding.

Group I: This group of 252 patients was permitted to use aspirin chewing gum as desired. No other medication was prescribed except codeine for the adults. This constituted the control group. There were 25 cases of late bleeding, and incidence of 9.9 per cent. In 3 of these patients, it was possible to have prothrombin determinations made at the time of bleeding. The results were normal in all 3 cases.

Group II: This group of 128 patients was permitted to use aspirin chewing gum

as desired but also took 20 mgm. of synthetic vitamin K daily for 7 days post-operatively to counteract any possible prothrombinemia that might have resulted. No other medication was prescribed except codeine for the adults. There were 13 cases of late bleeding, an incidence of 10.1 per cent. To 50 of the above patients 200 mgm. of ascorbic acid was given daily postoperatively as well as vitamin K. There were 5 instances of bleeding in this group, an incidence of 10 per cent.

Group III: In this group 184 patients did not employ aspirin chewing gum at all. Vitamin K or vitamin C were not given, but codeine was prescribed for the adults. No other medication was prescribed or forbidden. There were 2 cases of late bleeding in this group, an incidence of 1.1 per cent. This confirms our feeling that the main cause of late tonsillar bleeding is primarily local and not constitutional. We feel that it is caused by the local action of a solution of aspirin in saliva on the coagulum.

Group IV: These 594 patients did not employ aspirin chewing gum at all. No vitamin K or vitamin C were taken, but codeine was prescribed for the adults. In addition, the older children and all of the adults were encouraged to freely use a lozenge containing tyrothricin and a local anesthetic agent* during the postoperative period. A total of 202 patients used such lozenges, of which 2 reported late bleeding, or an incidence of 0.99 per cent. The remaining 392 patients in this group were younger children who did not use the lozenges. There were 6 instances of late bleeding, or an incidence of 1.5 per cent.

Group V: This group consisted of 474 patients who did not employ aspirin chewing gum at all. No vitamin K or vitamin C was taken, but codeine was prescribed for the adults. All patients were given an intramuscular injection of 300,000 units of procaine-penicillin immediately preoperatively and on the morning following surgery. In addition, the older children and adults were encouraged to freely use a lozenge containing tyrothricin and a local anesthetic agent during the convalescent period. A total of 145 patients used such lozenges, of which 2 cases reported late bleeding, or an incidence of 1.4 per cent. Of the remaining 329 patients who did not employ such lozenges, there were 3 cases of late bleeding, or an incidence of 0.9 per cent.

SUMMARY AND CONCLUSIONS

1. A series of 1632 consecutive cases of tonsillectomy and adenoidectomy have been studied in an effort to determine the causes and methods in prevention of post-operative bleeding.

2. Bleeding following tonsillectomy and adenoidectomy may be classified into primary and secondary hemorrhage. The causes and management of primary bleeding and of secondary hemorrhage are different and unrelated.

3. Primary bleeding is invariably caused by a faulty surgical technique or by some constitutional disorder which interferes with the proper clotting of blood.

4. Secondary late bleeding results largely from secondary infection of the operative site and from the effects of certain drugs, notably aspirin, acting locally upon the coagulum of the operative site.

* The author wishes to acknowledge Sharpe and Dohme for supplying "Tyrozets" and the White Laboratories for supplying "Lozilles" for this study. "Amotrocin" was also supplied by McNeil Laboratories but was not as acceptable to the patients.

5. By the elimination of aspirin chewing gum, the incidence of late tonsillar bleeding was reduced from 9.9 per cent to 1.1 per cent.

6. The use of tyrothricin-anesthetic lozenges post-operatively has no appreciable effect in further reducing late tonsillar bleeding, but provided a measure of comfort to the patient, and reduced secondary infection of the operative wounds.

7. The administration of long-acting parenteral penicillin has had no appreciable beneficial effect in reducing post-operative bleeding, but has reduced post-operative sequelae and complications, especially local infection and upper respiratory infections.

A TREATMENT FOR HYPERHIDROSIS*†

HARRY M. ROBINSON, M.D.

Neither roentgen rays, local applications of a solution of formalin nor atropin internally have given satisfactory results in the alleviation or control of hyperhidrosis. Sometimes this condition has often been severe and annoying. When, therefore, it was noted that B-diethylaminoethylxanthine-9-carboxylate methobromide (trade name, Banthine Bromide®) used in gastric ulcers and acting as a parasympathetic blocking agent inhibited sweating (1) as well as gastric fluids, and its influence on excessive sweating was confirmed by Grimson et al. (2) it seemed desirable to try the anti-sweating value of this drug in the relief of hyperhidrosis palmaris, plantaris and axillaris. While treating these hyperhidrotic conditions, the drug was also given to patients with non-infectious perleche, burning mouth (not caused by electrical discharges of dissimilar metals in the mouth) and cases of vesicular conditions of the hands. Good results were obtained in hyperhidrosis palmaris, plantaris and axillaris, but not in the vesicular eruption of the hands of undetermined etiology, nor in burning mouth or perleche.

DOSAGE

In view of the fact that the conditions treated were not serious prognostic problems, it seemed wiser to use smaller, rather than larger doses (such as are employed in gastric ulcers) and, therefore, treatments were begun with one 50 mg. tablet a day. If this was well tolerated, the dose was increased to one twice a day, and then 3 times a day. As soon as a desired result was obtained, the dose was reduced to 2, and finally to a maintenance dose of one a day.

REACTIONS

The most constant reaction was dryness of the mouth. This occurred only with three tablets (150 mg.) a day. One patient complained of abdominal pains, and 2 complained of inability to eat if a tablet was taken just before meal time, and a "heavy" feeling in the epigastric region was experienced if taken immediately afterwards. With the above dosage, 50, 100 or 150 mgm. a day, there was no acceleration of the pulse, nor mydriasis or urinary retention.

SHORT REPORT OF CASES

Case No. 1. (L.W.): A 14 year old white boy was first seen in the University of Maryland Out-patient Department of Dermatology, complaining of marked palmar sweating, which was all the more annoying because he had to use crutches. He had been a patient at another hospital in 1930 because of suspected Osgood-Schlatter's disease. At the skin clinic, he was being told that there was no known treatment of value for the hyperhidrosis. After 2 weeks of Banthine Bromide treatment, his hands were comfortably dry, and he was used in demonstration to students as being under control with a maintenance dose.

* From the Department of Dermatology, School of Medicine, University of Maryland. I wish to thank Searle & Company who made the drug available for use in this work.

† Received for publication August 24, 1951.

Case No. 2. (A. B.): A single, white female, age 44, stated that "for as long as I can remember" there has been excessive sweating of the palms so that when she clinched her hands, drops of sweat fell to the floor. Emotional strain increased the sweating. She was placed on Banthine Bromide on March 31, 1951, 50 mgm. 3 times a day. Within a week, there was definite improvement in the sweating, and complete control continued as long as she took the tablets.

Case No. 3.† (W. W.): A married, white male, age 34, had had sweating and a vesicular eruption of the hands and feet for 2 years. Two months of local therapy had no effect. Banthine Bromide was begun December 21, 1950, one tablet of 50 mgm. 4 times a day. The patient complained of dryness of the throat, some stomach spasms and slight nausea. Treatment was reduced to 2 tablets a day. On January 4, the condition improved and by January 14, his hands no longer were moist. Banthine Bromide was reduced to one tablet a day on March 21 and his condition remained satisfactory.

Case No. 4. (H. R.):* A white, married female, age 36, complained of marked axillary sweating and a dermatitis which had resulted from the use of a deodorant. Banthine Bromide was prescribed, 1 tablet 4 times a day. This dosage had to be reduced to 2 a day, because of dryness of the throat. The axillary sweating was definitely lessened, but the dermatitis continued for several weeks.

Case No. 5.† (S. R.): A married, white female, age 32, has had severe sweating of the axillae and palms "for years." Local treatments, such as Burow's solution and deodorants had not benefited. She was treated with Banthine Bromide, 50 mgm. 3 times a day beginning on April 26, 1951 and by May 3, 1951, there was much improvement. By May 17, there was markedly reduced sweating of the axillae and palms. She complained of annoying throat dryness. The drug was reduced to 50 mgm. twice a day. On June 2, 1951, perspiration was of normal amount, and the patient was put on one 50 mgm. tablet a day.

Case No. 6. (L. S.): A married, white male, age 27, was first seen on January 7, 1947 with a vesicular eruption of the hands, possibly of fungus origin. He was seen again on February 2, 1951 with a recurrence. At this time he was given Banthine Bromide tablets to be taken, 1 twice a day, and on February 23, returned stating that he had been more comfortable since taking the tablets, and his hands were very much drier with fewer vesicles. The patient returned on March 15 with a recurrence and Banthine Bromide tablets were stopped.

CONCLUSIONS

With careful observation for reactions and adjustment of the dose, untoward reactions may be avoided and a good result obtained with satisfactory reduction of excessive sweating, through the use of Banthine Bromide.

REFERENCES

1. KERN, F.; ALMY, T. P., AND STOLK, N. J.: The effects of a new quaternary amine on the motility of the human colon, *Am. J. Med.*, in press.
2. GRIMSON, K. S.; LYONS, C. K.; WATKINS, W. T., AND CALLAWAY, J. L.: Successful treatment of hyperhidrosis using banthine, *J. A. M. A.* **143**: 1331 (Aug. 12) 1950.

* Case of Dr. R. C. V. Robinson.

† Case of Dr. Lee R. Lerman.

TREATMENT OF HEREDITARY HEMORRHAGIC TELANGIECTASIA WITH RUTIN: A CASE REPORT*

JOHN P. DOENGES, M.D.

Since hereditary hemorrhagic telangiectasia was first recognized as a clinical entity by Rendu (1), Babbington (2) and Osler (3), there have been many additional case reports and numerous excellent reviews on the entire subject (4, 5, 6, 7, 7a, 8, 9). The name which is used in this report was first designated by Hanes (9), who did much in simplifying the concept of this disease and toward understanding the basic pathologic processes involved. Goldstein (7) summarized the literature previous to 1931 and found at that time approximately 550 reported cases. In the past there has been no form of treatment available which could be directed at the capillary abnormality. However, the clinical application of rutin and related compounds has introduced a new agent for treatment of capillary disorders. Kushlan (10) has treated one case of hereditary hemorrhagic telangiectasia which had episodes of gastro-intestinal hemorrhage with rutin, with prompt remission of bleeding.

The patient presented in this report is quite characteristic and, in addition, showed an alleviation of symptoms after rutin therapy. This case is reported in the hope of stimulating further evaluation of this drug in the treatment of hereditary telangiectasia.

Case Report

First admission: November 23, 1944.

The patient, a 55-year-old white male farmer, was admitted to the University Hospital because of hematuria, nosebleeds, spots on his face, weakness and shortness of breath.

Since childhood this patient had noticed small red spots over his face and trunk. They seemed to wax and wane to some extent but were constantly evident. He had also noticed that his nose bled quite easily. About 20 years prior to admission he began to have intermittent bouts of hematuria, usually lasting 2 or 3 days and separated by periods varying from 6 months to a year. Prior to admission the attacks had been occurring more frequently and the bleeding seemed more profuse. After each attack he found that he was becoming progressively weaker and shorter of breath. In addition, during the last 3 months he had noticed that he bruised on very minor trauma. The remainder of the history did not contribute to the present illness, with the exception of the family history, which is presented graphically (Chart 1).

Physical examination.—The blood pressure was 120 diastolic over 70 systolic; pulse 96; temperature 97.4 F. The patient was rather obese and his skin was pale. Over the skin of the face, trunk and upper extremities and on the mucous membranes of the eyes and mouth there were numerous fiery red telangiectatic areas. These were of two types: one was a raised, well outlined papular lesion averaging 3–4 mm. in diameter, and the second type was flat with numerous spidery projections and measuring 1–2 cm. in its over-all diameter. There was no bleeding from these cutaneous lesions (see Fig. 2, 3).

There were no hemorrhages in the eye grounds. The glands were not enlarged. The heart was slightly enlarged to the left and there was a mitral systolic blow which was transmitted to the axilla. The remainder of the physical examination was entirely negative.

A summary of the laboratory studies on this and subsequent admissions may be seen in Table 1. Daily urine specimens showed persistent erythrocytes by microscopic examination. On several

* From the Olney Clinic, Olney, Ill.

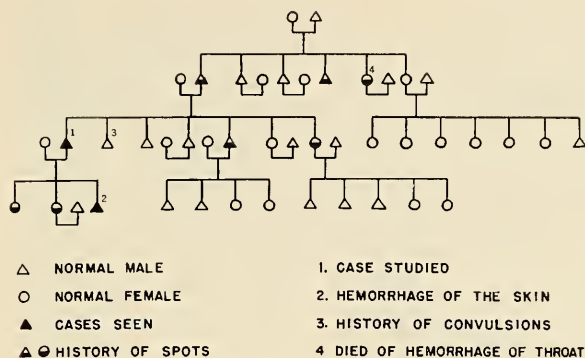


FIG. 1. Family History.

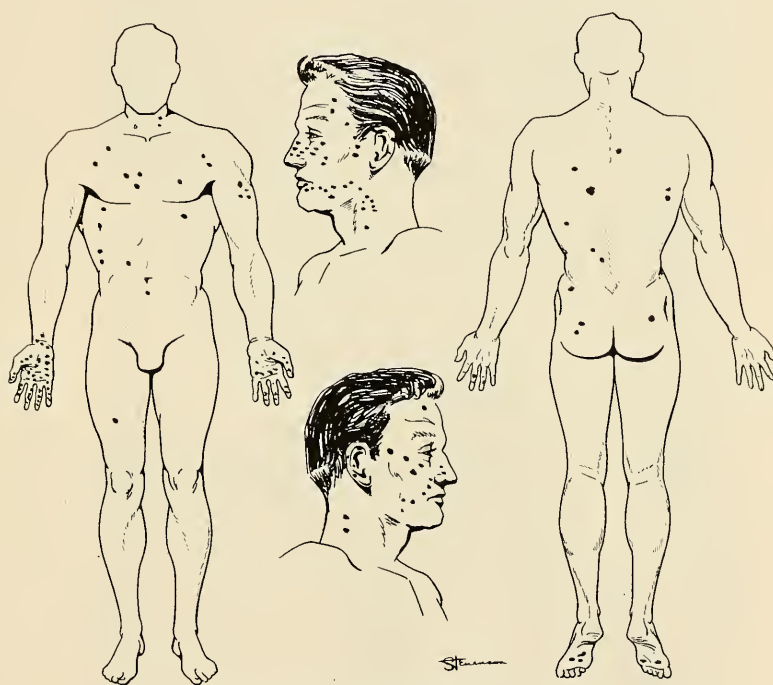


FIG. 2. Distribution of lesions in this patient.

occasions the stools were found to contain blood by the Guiac test, but this finding was not constant. The phthalein test showed poor renal concentration with a total of 16 per cent in 2 hours.

A roentgen-ray examination of the kidneys, by intravenous pyelography, showed a poorly functioning right kidney with minimal hydronephrosis on that side. A benign bone cyst was incidentally discovered by roentgenology at the neck of the left femur.

During this admission the patient received 5500 cc. of whole blood, but no other specific therapy was given. He was discharged after a 50-day hospital stay with a hemoglobin value of 11.5 gms. At the time of discharge there was no evidence of bleeding from either the gastro-intestinal or genito-urinary tract.

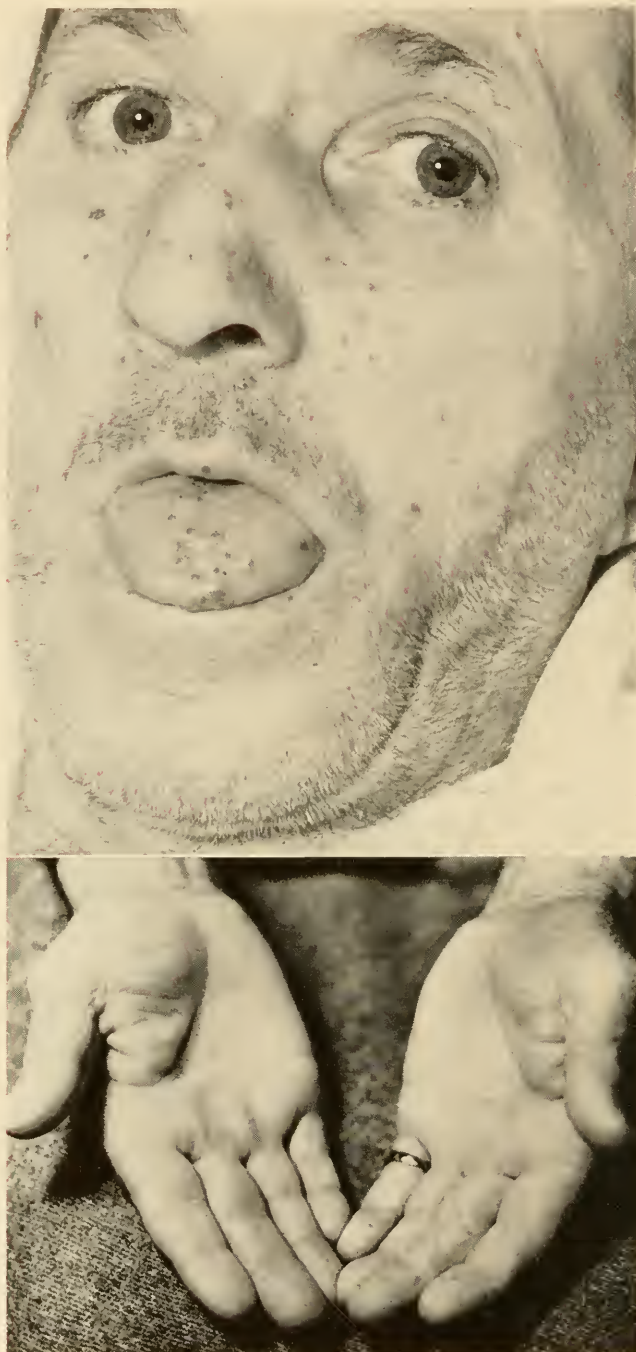


FIG. 3. Telangiectatic lesions of the face, tongue and eyelid and
3b. telangiectatic lesions of the hands.

TABLE 1
Comparison of Admission Laboratory Studies

TEST	FIRST ADMISSION	SECOND ADMISSION	THIRD ADMISSION
Erythrocytes.....	3.07 million	2.97 million	1.55 million
Hemoglobin.....	4.1 grams	6.1 grams	2.4 grams
Hematocrit.....	20	22	9
Leucocytes.....	8720	5450	4250
Differential			
Polymorphonuclear cells.....	63%	85%	75%
Lymphocytes.....	28%	12%	9%
Monocytes.....	1%	3%	11%
Eosinophils.....	2%		4%
Basophils.....	1%		1%
Others.....	5% atypical lymphocytes	Reticulocytes 1.8%	Reticulocytes 4.2%
Platelets.....	795,000	823,600	171,600
Bleeding time*.....	4 minutes	1 minute, 40 seconds	1 minute
Clotting time†.....	6 minutes	14 minutes	11 minutes
Clot retraction time.....	Normal	Normal	Normal
Volume index.....	.79		
Color index.....	.46		
Mean corpuscular volume.....	65 cubic microns	74 cubic microns	71 cubic microns
Mean corpuscular hem. conc.....	20%	28%	28%
Mean corpuscular hemoglobin.....	13 micromicrograms	21 micromicrograms	19 micromicrograms
Sickling.....	None present		
Erythrocyte fragility.....	Began 0.54%, complete 0.21%		Began 0.57% complete 0.36%
Prothrombin time‡.....	14 seconds	20 seconds	16 seconds
Serum calcium.....	9.5 mgm. %	9.6 mgm. %	
Serum phosphorus.....	4.96 mgm. %	6.1 mgm. %	
Serum alkaline phosphatase§.....	23.3 units	5.8 units	
Blood urea nitrogen.....	43 mgm. %	72 mgm. %	31 mgm. %
Serologic test for syphilis**.....	Positive	Positive	Positive
Gothlin index††.....		Negative	

* Finger prick method.

† Lee-White method.

‡ Quicke method.

§ Bodansky method.

** Kline screen, Kline diagnostic, Eagle flocculation, Eagle complement fixation.

†† Ahlborg (25), Shanno (24).

Second admission: July 3, 1947.

This patient was readmitted with the chief complaint of weakness. Since discharge he had had an occasional nosebleed and several brief episodes of hematuria. Three months before admission he began to notice progressive weakness. One week prior to admission he had an attack of nausea and vomiting associated with tarry stools. The patient did not believe that the spots on his face and trunk had changed in appearance since his previous admission.

The physical examination at this admission was essentially unchanged, with the exception that

the patient had apparently lost weight. The skin and mucous membranes were quite pale. The telangiectatic areas had the same general appearance and configuration.

(The admission laboratory studies will be found in Table 1.)

A stool examination gave a positive reaction for blood with the Guiac test. The urine examinations showed a consistent albuminuria with numerous erythrocytes and the urine did not concentrate above 1.012 nor dilute below 1.007. The urea-N was elevated on admission but returned toward normal during the hospital stay. Capillary fragility was tested to cold, using direct exposure to ice and to trauma by snapping a rubber band against the forearm. Three petechia appeared after exposure to ice.

Treatment again consisted mainly of blood transfusions and supportive measures. The patient received 1350 cc. of whole blood. In addition, he received crude hesperidin. There was no recurrence of blood in the stools and the hematuria disappeared. He was discharged with instructions to continue on rutin and ferrous sulfate.

Third admission: January 17, 1948.

The patient was readmitted with the complaint of nosebleeds and weakness. He had taken rutin for two weeks after his previous discharge, and then he had stopped all medications. Shortly thereafter he had a recurrence of his nosebleeds and had 4 serious episodes of epistaxis, the last attack 2 weeks prior to admission. With each such attack he became progressively weaker. Between the profuse bleeding bouts there was almost constant slow hemorrhage.

A physical examination on this admission was again essentially unchanged, with the exception of moderate splenomegaly and hepatomegaly.

Laboratory examinations approximated those obtained on his previous admissions (see Table 1). The degree of anemia was severe, with a hemoglobin of 2.9 gms. and 1.55 million erythrocytes. There was no gross or microscopic blood in either the stools or the urine. Rumple-Leede test was negative. The patient had a total blood volume of 77.3 cc./Kg., with a circulating erythrocyte volume of 11.2 cc./Kg.

The patient was again given rutin and repeated blood transfusions, with prompt cessation of all bleeding. He was discharged as improved, and instructed to continue to take rutin and ferrous sulfate daily.

No definite dosage pattern has been determined, but apparently 60 to 120 mgm. of rutin (10, 11) per day is sufficient to reverse a positive Gothlin index. Smaller doses seem to be capable of maintaining capillary resistance once it has been reverted to normal. This patient received 180 mgm. of rutin while in the hospital and was discharged on a dose of 120 mgm. per day. This dose was to be reduced gradually as his course indicated.

Follow-up: May 31, 1948.—The patient took rutin sporadically and had no serious hemorrhages over a 5-month period. However, on several occasions he had mild nosebleeds. In spite of this, he was convinced that rutin had helped him and he volunteered that his "spots" were less conspicuous than previously. He was rehospitalized because of his nosebleeds so that the nasal telangiectases might be cauterized. At this time he was placed on hesperidin methyl chalcone in place of rutin, but as yet there has not been sufficient time to evaluate its effectiveness.

DISCUSSION

As its name suggests, there are 3 cardinal manifestations of hereditary hemorrhagic telangiectasia. In the present case all the criteria for diagnosis are fulfilled. The hereditary aspects can be traced through 4 generations without any apparent predilection as far as sex is concerned. However, none of the other members of the family were quite so severely affected as this patient. Characteristically he did not develop evidence of telangiectasia until adolescence. Hemorrhage from the telangiectatic areas was often quite profuse and frequently occurred without evidence of trauma. Blood studies on each of the patient's 3 admissions showed a marked secondary anemia with a normal platelet count, bleeding time, clot re-

traction time and tourniquet test. On his last admission the clotting time was slightly elevated. It is probable that this was a result of the elevated prothrombin time and the severe secondary anemia, rather than resulting from the disease per se.

It is worthy of note that only on the third admission did this patient show evidence of splenomegaly. Barrock (4) has pointed out that enlargement of the spleen and liver occurs late in the disease and usually in severe cases only. Osler (3) and Galloway (27) have also reported cases with splenomegaly, but in their cases, as in this one, other causes of enlargement of the spleen could not be eliminated. In both of their cases there was a history of syphilis of long duration, and the case reported by Galloway had tuberculosis and malaria. The role of latent syphilis as an etiologic factor of the splenomegaly in this patient must be considered. However, in the cases of Fitz-Hugh (12) and Goldstein (13) no other cause was apparent and the splenomegaly might be attributed to the disease. Fitz-Hugh noticed a coincident occurrence of splenomegaly and hepatomegaly in 4 cases which were all of Type O blood group and he postulated a relationship between the hereditary nature of the disease and the blood group. Symmers (14) presented one case of localized telangiectases in the spleen with marked enlargement of this organ, and also reviewed 2 other such cases which he found in the literature.

The present case illustrates the necessity for transfusions when the bleeding has been prolonged or profuse. Fitz-Hugh (12) calls attention to the dangers of transfusions in such patients, especially when there is hepatomegaly and splenomegaly in those individuals who fall in type "O" blood group. This patient had type "O" Rh positive blood and during three hospital admissions received a total of 17 transfusions. On several occasions he had a febrile reaction and once there was mild urticaria, but in no instance was there any reaction of serious consequence. One wonders if perhaps the reactions described by Fitz-Hugh could not have been caused by Rh incompatibilities? For in each of the 4 cases which he presents, there is a history of previous blood transfusions, usually without reaction on the first transfusion. Then too, each reaction was characterized primarily by jaundice. It does not seem wise to withhold transfusions when the degree of secondary anemia is such as to endanger the patient's life, and especially now that the blood sub-groups are more clearly understood.

The distribution of lesions in this patient was not unusual. In addition to the cutaneous telangiectases located over the face, neck, trunk and upper extremities, he had visible and suggestive evidence of lesions over the gastro-intestinal, upper respiratory and genito-urinary tracts. Telangiectases, with or without hemorrhages, have been found in every conceivable site of the body. Ballantyne (15) reported a family in which telangiectases were present on the palpebral conjunctiva, and in 2 members of this family bleeding occurred at this site. Spiller and Frazier (16) reported a case with involvement of the meninges of the spinal cord and brain, and Reitzel and Brindley (17) reported a patient with spontaneous cerebral hemorrhage who on autopsy showed multiple vascular telangiectases of the brain. However, the most common sites are the skin, or in the nasal and buccal mucous membranes, and the gastro-intestinal and genito-urinary tracts.

Hereditary hemorrhagic telangiectasia is fundamentally a disease of the capillaries.

Hanes (9) first clearly defined the histo-pathologic pattern in the skin. He described enormous dilatation of blood vessels of the corium with obliteration of the papillae and absence of the undulations of the stratum germinativum. Singer and Wolfson (18) pointed out that this disease belonged to the group of hereditary capillary disorders which they term the capillary heredopathies. They felt that the 3 diseases, pseudohemophilia, hereditary familial purpura and hereditary hemorrhagic telangiectasia, were definitely interrelated, and it is true that bleeding studies, characteristic of one of these disorders, will often be found present in one or both of the diseases. For example, occasionally the tourniquet test will be positive in hereditary

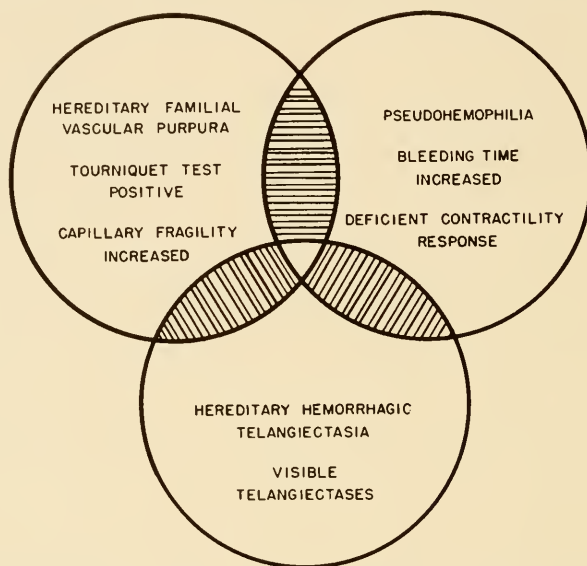


FIG. 4. This diagram illustrates the pure forms of capillary heredopathies and the suspected interrelationship between these syndromes. (From Wells.)

telangiectasia or the bleeding time will be elevated in familial purpura. Wells (19) has substantiated the existence of such a relationship, and he feels that deficient capillary contractility and decreased capillary resistance or increased fragility are observed in association with the telangiectases (see Fig. 4).

There is no available clue concerning the mechanism by which the hemorrhagic manifestations are brought about. However, as early as 1909 Hanes mentioned alcoholism as one of the etiologic agents, citing 3 cases of his own and one case of Osler's in which there was abuse of alcohol. He felt that this, plus trauma, might have a precipitating effect in so far as recurring hemorrhages were concerned. One is tempted to draw conclusions of a nutritional deficiency as the etiologic agent rather than the alcoholism per se. The relationship of alcoholism and malnutrition to cirrhosis of the liver seems apparent and the cutaneous arterial spider is regarded as part of the symptom complex of cirrhosis. In addition, telangiectases have been described in severe cases of pellagra (20, 21), and Majocchi (22) thought this to be especially true in alcoholic pellagrins. The patient described here, although not an

alcoholic, was of the lower income group and his diet was probably inadequate. The role of malnutrition and hemorrhage in this disease certainly deserves closer scrutiny, with special emphasis on the vitamin deficiencies.

Scarborough (23) showed experimentally that vitamin P deficiencies did exist with increased capillary fragility to positive and negative pressure. He also demonstrated that vitamin P administration would increase capillary resistance in such cases. Vitamin P is probably identical with citrin (24), which is a mixture of hesperidin, eriodictyol and other less well defined substances. Hesperidin, itself physiologically inert in its pure form, is closely related to rutin structurally, and it is thought that rutin may be one of the active components of citrin or vitamin P.

Shanno (24) has used rutin in treating 31 cases which showed increased capillary fragility by the Gothlin index with satisfactory increase in the capillary resistance. He also reported 2 cases of pulmonary hemorrhages of undetermined origin in which the Gothlin index was elevated and which apparently improved after rutin therapy. Griffith (11) has also demonstrated a beneficial action of rutin on abnormally fragile capillaries without any signs of toxicity. In 2 of Griffith's hypertensive patients who stopped taking rutin, the capillary fragility increased to its previous level at the end of 6 weeks.

The use of rutin in hereditary telangiectasia was first advocated by Kushlan (10) who reported one case in which there was a remission of gastro-intestinal bleeding following the use of rutin. The source of bleeding was a telangiectatic spot on the gastric mucosa which was observed gastroscopically. Peluse (26) treated one patient who had gingival hemorrhage with vitamin P lemonade, and the bleeding was controlled for approximately 4 weeks, but as soon as the medication was stopped the hemorrhage recurred. In the case presented herein, though the tourniquet test and the Gothlin index were negative, it was felt that decreased capillary resistance might be present in the telangiectatic lesions. In addition, there was some increased capillary fragility to cold. Because of this, the patient was given rutin. There was a remission of symptoms after this drug was started, and when on his own initiative the patient discontinued it, the bleeding recurred. Rutin was given once more after he had a prolonged epistaxis and again the bleeding promptly stopped. However, with the cessation of hemorrhage there was no visible change in the appearance of the lesions. Spontaneous remissions are not uncommon in this disease, but this series of remissions coincident with rutin therapy is certainly striking. There is no hope that rutin will cure hereditary telangiectasia, for the underlying inherent factors cannot be altered, but it does seem likely that a method of controlling hemorrhage in these patients is at hand.

SUMMARY

1. A case of hereditary hemorrhagic telangiectasia in which bleeding was a severe manifestation is presented.
2. The relationship between splenomegaly and this disease is discussed.
3. The advisability of transfusing such patients is considered.
4. The location of the lesions in this case and in reported cases is reviewed.
5. The rationale and effects of rutin therapy are discussed.

BIBLIOGRAPHY

1. RENDU: Bull. et mem. Soc. med. d. hop. de Paris, **13**: 731, 1896.
2. BABINGTON, B. G.: Lancet, **2**: 362, Sept. 3, 1865.
3. OSLER, W.: Bull. Johns Hopkins Hosp., **12**: 333, Nov., 1901.
4. BARROCK, J. G.: Wisconsin M. J., **43**: 805, Aug., 1944.
5. BEAN, W. B.: Medicine, **24**: 243, 1945.
6. BOSTON, N. L.: Am. J. Med. Sc., **180**: 798, 1930.
7. GOLDSTEIN, H. I.: Arch. Int. Med., **48**: 836, 1931.
- 7a. Ibid: Internat. Clinics, **2**: 43, 1934.
8. ALBANS, H.: Northwest. Med., **40**: 86, 1941.
9. HANES, F. M.: Bull. Johns Hopkins Hosp., **20**: 63, 1909.
10. KUSHLAN, S. D.: Gastroenterology, **7**: 199, Aug., 1946.
11. GRIFFITH, J. Q., COUCH, J. F. AND LINDAUER, M. A.: Proc. Soc. Exper. Biol. & Med., **55**: 228, 1944.
12. FITZ-HUGH, T., JR.: Am. J. Med. Sc., **181**: 261, Feb., 1931.
13. GOLDSTEIN, H. I.: Arch. Int. Med., **27**: 102, Jan., 1921.
14. SYMMERS, D.: J. A. M. A. **77**: 2019, Dec. 24, 1921.
15. BALLANTYNE, A. J.: Glasgow M. J., **70**: 256, Oct., 1908.
16. SPILLER, W. Q. AND FRAZIER, C. H.: Arch. Neurol. & Psychiat., **10**: 29, July, 1923.
17. REITZEL, R. J. AND BRINDLEY, P.: Am. J. Med. Sc., **178**: 689, Nov., 1929.
18. SINGER, K. AND WOLFSON, W. Q.: New England J. Med., **230**: 637, 1944.
19. WELLS, E. B.: Am. J. Med. Sc., **211**: 577, May, 1946.
20. MARIE, A.: Pellagra. Translated by Lavinder, C. H. & Babcock, J. W., State Co. Columbia, S. C., p. 225, 1910.
21. FEARNSIDES, E. G.: Brit. J. Dermatol., **24**: 35, 1912.
22. MAJOCCHI, D.: Pellagra. Quoted by Harris, H. F., Macmillan Co., New York, 1919.
23. SCARBOROUGH, H.: Biochem. J., **33**: 1400, 1939.
24. SHANNO, R. L.: Am. J. Med. Sc., **211**: 539, May, 1946.
25. AHLBORG, N. G. AND BRANTE, G.: Act. Med. Scandinav., **104**: 527, 1940.
26. PELUSE, S.: Arch. Otolaryngology, **44**: 668, Dec., 1946.
27. GALLOWAY: Quoted in (4).

EDITORIAL

COMPLEXITY—THE UNSOLVED PROBLEM

That medicine has become increasingly complex is established. The fact that this complexity has largely evolved in a period of some 70 years is still more amazing. Everyone will agree that the rate at which new scientific knowledge has been accumulating has and continues to exceed the ability of any one individual to properly comprehend, integrate, and summarize it. In the direction of consolidation, we have developed sound principles of medical education for undergraduate students. The Association of American Medical Colleges and the American Medical Association have pioneered in an excellent job of consolidation.

We have seen the rise of specialties, most of which have been recognized 40 years or less. Specialty societies, specialty research, board examinations, and specialty journals have evolved, ostensibly as a means of consolidating and clarifying thought with a view in mind of providing useful standards for comprehensive thinking in separate disciplines. Thus, instead of a broad concept intellectually digestible by the individual practitioner, we have been forced to seek division as a means of overcoming an intellectual dilemma. The fallacy is that we have continued to practice division to the effect that some specialties have now subdivided themselves once and sometimes twice, the subdivision being so narrow in scope as to make it impossible to approach the patient and his problem as a whole or as an individual. Such necessitates rather, a medical production line type of procedure with diverse specialists contributing to the solution of the problem. This procedure is the natural outcome of man's desire to effect an optimum level where the knowledge available can be understood by him and usefully employed. It is rather an admission of an inability to comprehend the whole of medicine which, through its diversity, can no longer apparently be usefully employed to the extent to which scientific developments have advanced it. We are perhaps building a Tower of Babel. We are thus perhaps depriving patients of the family doctor; we are reducing greatly the number of effectives in any community, and by virtue of cost alone, are increasing greatly the burden of illness.

The complexity of man and his relationship to the complexity he has created through his research might be used to sound an urgent call for investigators not interested particularly in new facts of science but in consolidation, evaluation, and the synthesis of ideas into useful, broad concepts. The original investigator should be encouraged, and above all, the medical writer and consolidator of information must be trained. The stimulus of competition and the offering of almost unlimited research funds to medical centers will provide sufficient opportunity for original research. Stimulus must be given to those physicians who are capable of broad understanding. Their ultimate encouragement should be in a field not necessarily productive of new facts but a field much needed in order to gather isolated facts into a useful concise understanding. It is hoped that in the era to come, young physicians may develop the know-how to the effect that consolidation of medical knowledge can be kept abreast of its acquisition.

OBSTETRICAL CASE REPORT*

A 24 year old, white patient, para 1-0-0-1, had an estimated date of confinement of July 1, 1953. Her family and past history were negative. A previous pregnancy terminated normally without difficulty. She was seen for the first time with this pregnancy after having missed her second menstrual period. Complete physical and chemical examination was well within normal limits. The pregnancy progressed normally until examination in the office on May 15, 1953, at this time she stated that she had not felt fetal movement for the past 3 days. On examination of the abdomen the size of the uterus and infant was compatible with a period of 34 weeks gestation. There was a vertex presentation with the presenting part dipping into the pelvis. The fetal heart could not be heard nor could fetal movements be elicited by the examiner.

The patient was admitted to the hospital on the same day. On vaginal examination the cervix was found to be 50 per cent effaced and one finger dilated. The presenting part, the head, was dipping into the pelvis approximately 2 cm. above the ischial spines. Because of fetal death in utero the membranes were ruptured without difficulty. Twenty-four hours later there had been no uterine contractions so the patient was placed on adequate therapeutic doses of penicillin and dihydrostreptomycin. A medical induction was given using castor oil, enema, and intravenous Pitocin®. The medical induction produced a few cramp-like contractions, but labor did not ensue. Forty-eight hours after admission the patient had a temperature of 101.6 (F). In spite of continuing antibiotic therapy the temperature remained elevated until the onset of labor some 72 hours after rupture of the membranes. The labor was desultory in character and lasted 31 hours with the birth of a premature stillborn child, weighing 2020 grams.

Following delivery, antibiotic therapy was continued, however the patient remained febrile with foul and profuse vaginal discharge. Forty-eight hours post partum the antibiotic was changed to Terramycin®. After 1 week she became afebrile. Nine days post partum she developed a thrombophlebitis. She was cured and discharged from the hospital on her twenty-first day.

What was the major error in the conduct of this case?

The changes which take place in the uterine cavity after fetal death cause no harm to the maternal organism. Frequently the patient is emotionally upset because she is aware that the fetus is no longer alive. This emotional imbalance can be easily prevented when one explains to the patient the possible complications that can ensue from the injudicious premature termination of pregnancy, and that no harm will be done to her if the pregnancy is continued. Invariably women who are allowed to continue their pregnancy until the spontaneous onset of labor have an uneventful labor and puerperium. It is recommended that the spontaneous onset of labor be the procedure of choice in patients with fetal death in utero. This is preferred rather than unwarranted termination of pregnancy with its associated dangers.

* From the Department of Obstetrics, University of Maryland School of Medicine, Baltimore.

CLINICO-PATHOLOGIC CONFERENCE

FROM THE CASE HISTORIES, UNIVERSITY HOSPITAL, BALTIMORE

Clinical History

A 50 year old colored male was stricken with weakness, dizziness, and vomiting while drinking coffee. After vomiting a quart of blood, he fainted.

The Out-patient Department had had this patient under its care for 4 years before this illness. He had been ordered to take 3 white pills each day, presumably for heart disease. Because of substernal discomfort he was considered the victim of heart disease, although he had had no dyspnea, orthopnea or edema. Before the present illness he had no nausea, vomiting, jaundice, diarrhoea, constipation or melena.

When the patient was seen at the hospital, he was anxious and restless but not in pain. His temperature, pulse rate and respiratory rate were normal but his systolic blood pressure was 80 mm. and his pulse pressure was 40 mm. of mercury. Visible signs of shock were present. By percussion, the left heart border was determined to be 1 cm. lateral to the left mid-clavicular line. A diastolic murmur and loud second sound were heard over the aortic valve. The blood pressures in the arms differed by 20 mm. of mercury. There were no abnormal pulsations in the neck or extremities. The lungs, abdomen and genitalia were considered normal.

At 5 P. M., the time of admission, the hemoglobin determination was 70 per cent, and at midnight, 60 per cent. The serologic test for syphilis, blood proteins, sugar and thymol turbidity were normal. There were no significant changes in the electrocardiogram or abnormalities in the tests for defective blood coagulation. The thrombocyte count was normal.

The patient was quieted with a barbiturate and given $1\frac{1}{2}$ liters of saline and $\frac{1}{2}$ liter of blood. The blood pressure then rose to 130 mm. of mercury. Twenty-two hours after admission, without warning, the patient vomited at least 1 liter of blood. One hour later, he was dead.

Clinical Discussion

Dr. Daniel Pessagno: This patient, like 25 per cent of the individuals with gastroenteric bleeding, did not give a history suggestive of previous alimentary disease. When bleeding occurs in the gastrointestinal tract without introductory symptoms, the doctor is behooved to initiate diagnostic methods as soon as possible. The urgency of this need is, of course, increased by the presence of massive bleeding. Roentgenographic examination of the patient during bleeding, although doubtfully treated by some, is encouraged here because it implements the diagnosis of peptic ulcer and esophageal varices, the causes of 90 per cent of the cases of intra-alimentary bleeding. Seventy-six per 100 cases of vascular mishaps within the digestive system are predisposed by peptic ulcer and 14 per cent, by esophageal varices. Early confirmation or exclusion of these lesions will facilitate the subsequent management of these patients whether the chosen treatment be medical or surgical.

The patient presented today is not considered as having a peptic ulcer because of the complete absence of dyspepsia before the immediate illness. He had been treated as a cardiac patient. The absence of clots in the vomitus, in my mind, stands against a bleeding peptic ulcer.

The condition of secondary importance, varices of the esophagus, is rejected because of the denial of alcoholism made by the patient. Other pertinent facts are the absence of liver dysfunction that might be indicated by the thymol turbidity

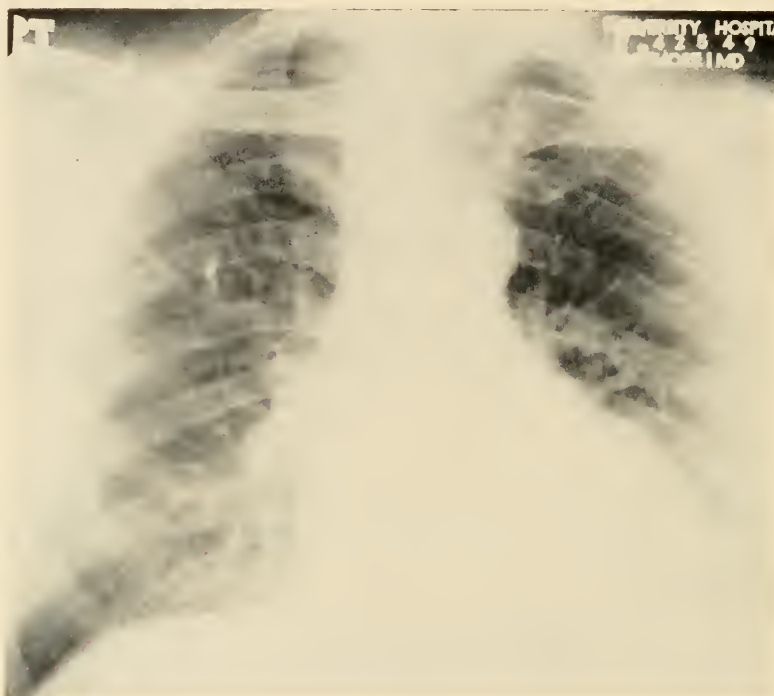


FIG. 1

test, and the absence of hemorrhoids and visible varicosities of the abdominal wall. The vomiting of bright red blood abrogates esophageal varicosities as its source.

In this case, a ruptured aortic aneurysm must be contemplated as the cause of the bleeding. However, a ruptured aneurysm would be expected to be more acutely catastrophic.

Diaphragmatic hernia and acute gastritis cause gastric hemorrhage, but usually not abruptly fatal exsanguination. The terminal event in this case precludes these 2 diagnoses.

There is nothing in the history or laboratory reports to indicate hemorrhagic diatheses.

The condition which I believe resulted in this patient's demise is epiphrenic esophageal diverticulum. In most instances, roentgenographic study results in the discovery of this lesion.

Dr. J. T. Brackin: The roentgenograms of this patient made several months before death disclosed a normal stomach, duodenum and aorta. The esophagus was not demonstrated. The heart was not enlarged.

Senior Student: Would you comment on 3 points in the history? The patient had been treated for heart trouble; secondly, the second aortic sound is described as loud; and thirdly, the blood pressure differs in the arms.

Dr. Pessagno: I certainly am not qualified to interpret the second aortic sound or the difference in the blood pressure.

Pathologic Discussion

Dr. Hugh R. Spencer: A fusiform aneurysm of the aorta was laid bare at autopsy. It extended from the aortic valve to the innominate artery. A perforation arising in the posterior wall of the aneurysm entered the esophagus. Fresh blood was contained by the stomach and duodenum.

Detailed study of the aorta disclosed longitudinal striations in the intima, "rolling" of the aortic cusp margins, and narrowing of the right coronary ostium. Lymphocytes encircled the vasa vasorum and infiltrated the focally scarred media.

Aortic aneurysms arise, expand, and rupture in a capricious manner. In this institution, luetic aneurysms have been seen rupturing into both cardiac auricles, the pulmonary artery and pericardial sac, and outwardly into the esophagus as in this case, bronchus, trachea and through the sternum.

Aortic aneurysm is rarely a cause of intra-alimentary hemorrhage.

The final diagnosis is luetic mesaortitis; aneurysm, ascending aorta; perforation, aneurysm and esophagus; and fatal hemorrhage.

Senior Student: I thought that ruptured aortic aneurysm causes sudden death.

Dr. Spencer: Usually that is true, but not in this case. Dr. Pessagno was deceived by his patient's bleeding for at least 22 hours before death.

Senior Student: I would like to know the explanation of the negative STS in this patient even though he had syphilis.

Dr. Howard F. Raskin: Could we see the roentgenograph of the pelvis again, to see if he has bismuth in his buttocks?

Dr. Brackin: No heavy metals are demonstrated in the buttocks. I do not see any evidence of aneurysm on re-examination of the chest film.

Dr. A. R. Mansberger: The negative STS does not rule out syphilis even in the secondary stage when it should be definitely positive. The test is only 98 per cent positive even in unquestionable cases.

BOOK REVIEWS

Poliomyelitis, Papers and Discussions Presented at the Second International Poliomyelitis Conference. *Compiled and edited for the International Poliomyelitis Congress. 555 pages, illustrated. J. B. Lippincott Company, Philadelphia, Pennsylvania, 1952. \$5.00.*

This authoritative work covers all aspects of poliomyelitis. Attention has been given by most of the outstanding workers in the field to the nature of the virus itself and to the pathology, differential laboratory diagnosis, treatment and epidemiology of the disease. The speed at which this volume was produced could not match, however, the velocity of poliomyelitis research. The recent accomplishments such as gamma globulin prophylaxis and tissue culture vaccine, therefore, are not included. The concluding section of more than 150 pages presenting the scientific exhibits of the meeting contributes little to the volume. Despite these limitations, the book is recommended highly to those interested in poliomyelitis.

MERRILL J. SNYDER, PH.D.

Essentials of History, by Margaret M. Hoskins, Ph.D. and Gerrit Bevelander, Ph.D. Published by: The C. V. Mosby Company, St. Louis; 1952, 2nd edition. Illustrated, 240 pages, \$4.00.

As indicated in the title and preface, this little book presents the bare essentials of a course in histology. No attempt has been made to stress correlations between structure and function. However, a few of the typical, well established correlations are mentioned in a very brief manner. This simple systematic form of presentation, along with the fact that there are 125 excellent illustrations and 2 color plates, would seem to make it an ideal book for an elementary course. It would appear to be an excellent text for college courses in histology. The relatively complete coverage of the histology of the oral cavity in the teeth indicates that it was probably intended for the use of dental students.

In spite of the fact that the book is very brief, it is accurate and shows that the authors have had considerable experience in teaching this subject. The index is also quite adequate. Such a brief, concise and accurate book deserves commendation in this day and age of ever thickening textbooks, that frequently tell you more about a subject than you want to know and collectively tax the capability of the human mind.

FRANK H. J. FIGGE, PH.D.

Applied Microbiology: a bi-monthly publication under the sponsorship of the Society of American Bacteriologists; edited by H. B. Woodruff; Microbiological Research Department; Merck and Company.

This is a new journal designed for the publication of studies oriented toward the application of microbiologic sciences to the fields of industry, foods, sanitation, agricultural and other areas involving the use or control of micro-organisms, excluding human and animal diseases. The first number appearing in January, 1953 carries detailed studies of the effects of various agents on the growth and behavior of assorted bacterial and fungus growths under varying circumstances. The work appears quite thorough, the printing and the editorial studies are excellent including a few well chosen, clear illustrations. The Journal should serve as an important repository for the growing literature concerning the effect of extraneous agents on the growth of micro-organisms and the application of bacterial growth to the production of synthetics.

J.A.W.

Clinical Obstetrics, by Clifford B. Lull and Robert A. Kimbrough; 732 pp. Illustrated. J. B. Lippincott Co., Philadelphia, Pa. Price \$10.00.

This new volume represents the collective efforts of the obstetric staff of the Pennsylvania Hospital, Philadelphia. It has been edited by the late Dr. Clifford Lull. With his death in 1951, the editorship fell to Dr. Robert Kimbrough, who has admirably carried on the high standard of obstetric teaching associated with the Pennsylvania Hospital. As a consequence this volume is a compendium of the knowledge and procedures found in that institution. Accordingly it cannot take the place of an exhaustive reference text for the specialty. That the material is drawn from the accumulated results of the Obstetric Department makes for a readable and interesting volume. What the student of obstetrics finds lacking in a sense of completeness of the subject, is compensated for by a practical

and clinical approach to obstetric problems. The medical student and average practitioner will find this stimulating.

The work is enhanced with 392 illustrations, and almost all are excellently well chosen. Of particular value is the excellent summary of related anatomic and physiologic material. The surgical and medical complications of obstetrics are well covered. The approach to the nutritional aspect of prenatal care has received special attention.

Coverage of some of the complications of labor, as well as anesthesia for delivery and Caesarean section, has been influenced by the procedures in use at the institution. The puerperal period appears to have suffered from lack of space allowed in the text.

This volume is recommended as an excellent refresher course for the busy obstetrician, and as a readable and succinct approach to obstetrics for the medical student and house officer.

DONALD CAMPBELL, M.D.

Physical Diagnosis, by Harry Walker, M.D., F.A.C.P., Professor of Clinical Medicine, Medical College of Virginia, Richmond, Virginia. 461 pages, illustrated. The C. V. Mosby Company, St. Louis, publisher, 1952.

This text is intended to introduce the student to the technique of physical diagnosis, and therein the author attempts to describe the signs generally considered to be most important in differential diagnosis. The author follows a regional system in outlining the most significant findings encountered in physical and psychiatric examination, then presents sections in which diseases of the respiratory and circulatory systems are described in more detail.

The author has presented the fundamentals of physical diagnosis in a readable form, but devotes approximately half the book to the cardiovascular and respiratory systems, with consequent skipping on such sections as anorectal diagnosis, skin lesions, ocular fundus, and the breast. Sections of contributors on the female pelvic diseases, psychiatric evaluation, and particularly neurologic examination are especially well written. The author fulfills his intention to present a survey of important physical diagnostic signs, but omits material in order to include a too-detailed description of pulmonary and cardiovascular disease—thus, like many others, presenting physical diagnosis to the neophyte reader chiefly as the diseases and examination of the chest.

GEORGE B. SMITH, M.D.

The Toxemias of Pregnancy. William J. Dieckman, B.S., M.D. 2nd Edition. C. V. Mosby Co., St. Louis, Mo. 1952. Price \$14.50.

The second edition of this review of the present day knowledge of the toxemias of pregnancy continues to be a most valuable volume for the student, the general practitioner and the obstetric specialist. The comments and opinions of the author with which it is freely interspersed are based upon a long experience and extensive research and reflect his deep interest in the subject. Case histories are used freely to illustrate and emphasize various aspects of the subject and add greatly to the reader interest.

To the reviewer it would appear to have been more in line with modern thinking to have simplified the classification of the toxemias and to have eliminated several conditions no longer considered to be toxemias of pregnancy. These conditions are important and at times serious and while they might very well be in the book, they should be in a separate section. Bitter experience has taught us that it is unwise to differentiate between mild and severe preeclampsia. In either instance convulsions may occur and it is possible that the terminology of "mild" preeclampsia might lull the physician into a state of false security and result in insufficient supervision of the patient.

Of particular importance and value is the chapter on prenatal care which deserves most careful perusal by everyone interested in or practicing obstetrics. It deserves a more prominent position in the format.

As stated by the author, until more is known of the etiology of preeclampsia and eclampsia, treatment must remain more or less empiric and symptomatic. Very correctly he insists upon absolute careful and constant observation of the patient and upon the prompt treatment of complications as they arise. The establishment of a routine treatment for this condition is not possible since patients must be treated individually.

LOUIS H. DOUGLASS, M.D.

Decompression Sickness—Caisson Sickness, Diver's and Flier's Bends and Related Syndromes. Compiled under the auspices of the Subcommittee on Decompression Sickness, Committee on Aviation Medicine, Division of Medical Sciences, National Research Council, Washington, D. C. 437 pages, illustrated. W. B. Saunders Co., Philadelphia, 1951.

Man is determined to put himself in places where nature never intended him to be and inevitably his body is exposed to stresses and strains which it was never designed to withstand. It is, of course, a tribute to his ingenuity that to date he has managed to devise the means to protect himself in most of these situations. This book describes in great detail the hazards encountered in one of them, the adjustments which must be met when the environmental pressure is suddenly lowered. Such conditions are found when a diver ascends from the high pressures found even in the shallows of the ocean and lake to atmospheric pressure, or when an aviator rises rapidly into the attenuated atmosphere of the stratosphere, or is suddenly and forcibly ejected from a pressure cabin while flying at high altitudes. The clinical syndrome which results when compensation fails is known as "decompression sickness" and its signs and symptoms are described in this book.

It is a book for the specialist and is not recommended for general reading. The organization is excellent and it is replete with tables, charts, figures and graphs accurately describing such things as the nitrogen clearance from joint fluid, nitrogen elimination from arterial blood at various altitudes, decompression times for helium-oxygen dives at various depths, effect of muscular activity during decompression on bubble formation, the incidence of bends as found among the male population, to mention a few. Many of the chapters, but not all, have summaries and are written by a group of distinguished physiologists, all of whom have made substantial contributions to this problem. This book is edited by John F. Fulton, chairman of the Subcommittee on Decompression Sickness of the Committee on Aviation Medicine. It has an excellent index and will undoubtedly be an extremely useful and valuable book to those working in the field. The bibliography contains over five hundred titles.

Individual chapters deal with such subjects as the clinical nature of decompression sickness, animal experiments on bubble formation, environmental factors affecting decompression sickness, preselection tests for aviators and explosive decompression. No doubt the well informed physician should know something about these things if for no other reason than increasing his store of general knowledge. Unfortunately he will probably have neither the time nor the inclination to dig them out of this volume, in spite of the fact that in this day and age no one knows what clinical problems he may encounter tomorrow.

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MEDICAL SCHOOL SECTION

MEDICAL LIBRARY NOTES

Books and journals were presented to the library by the following donors in the period from February first to May first:

Mrs. G. W. Billups

Dr. J. E. Bradley

Dr. C. R. Edwards

Dr. G. E. Gibbs

Dr. S. S. Glick

Dr. W. Goodman

William M. Gould

Dr. F. W. Hachtel

Charles Hammer

Dr. A. M. Kraut

Mrs. Samuel Novey

Dr. R. Oster

Dr. R. T. Parker

Dr. M. C. Pincoffs

Dr. J. W. Scott

Dr. J. E. Saváge

Dr. E. R. Shipley

Dr. E. Uhlenhuth

Dr. R. B. Wright

Dr. H. B. Wylie

* * *

The library is particularly interested in obtaining annual circulars and announcements of the University of Maryland School of Medicine before 1880. If alumni have any of these early publications in their possession, it would be a service to the School of Medicine to present them to the library for the Maryland Historical Collection.

* * *

Through the cooperation of Dr. James G. Arnold, Jr. and the tangible generosity of the Department of Neurological Survey, the library was able to obtain a complete set of the HANDBUCH DER NEUROLOGIE, edited by Bumke and Foerster. The earlier volumes of this classic in the field are now out of print. A full set is rarely available for purchase, and accordingly expensive. The library was most fortunate in finding a set and an interested department willing to contribute enough of the price to make purchase possible.

* * *

Each year the Medical Library Association provides one or more fellowships for medical librarians from foreign countries, so that they may study medical library methods used in the United States. The visiting librarians usually remain briefly in numerous medical libraries and spend more extended time in one or two, for intensive orientation.

In April of this year, Dr. Elisabeth van der Burg, librarian from the University of Leiden Medical Library, spent a month at the University of Maryland Libraries of Medicine, Dentistry, Pharmacy, Nursing, and Psychiatry. Her visit added greatly to the interesting international contacts which the medical library maintains. In recent years, the library has been visited by medical librarians from Europe, South America, Asia, and Australia.

PSYCHIATRIC INSTITUTE OPENS FOR PATIENTS

Dr. Jacob E. Finesinger, Professor of Psychiatry has announced that the south wing of the new Psychiatric Institute was made available for patients in June, 1953. The remaining floors of the Institute will be opened as soon as possible. Patients will be received from the University Hospital and from any other source of referral on a voluntary basis after signing a voluntary admission application form.

A fee schedule has been worked out on a "sliding scale" based on personal income and on the number of dependents. Information as to fees for psychiatric treatment at the Institute may be obtained by calling the Admitting Officer, Psychiatric Institute, Lexington 9-0320, Extension 641. Referrals to the Psychiatric Institute can be made also through the Chief Resident in Psychiatry or through other members of the staff.

A brochure describing in detail the admission procedure will be available shortly upon application to the Department of Psychiatry.

FELLOWSHIP ANNOUNCED BY DEPARTMENT OF LEGAL MEDICINE

The Division of Legal Medicine of the School of Medicine, University of Maryland has recently announced the establishment of Fellowships in medicolegal pathology. Dr. Russell S. Fisher, Professor of Legal Medicine at School of Medicine and Chief Medical Examiner of Maryland announced the inauguration of the Fellowship program with the following letter.

"The specialty of medicolegal pathology is becoming an increasingly important field of practice and research. Competent legislation providing for the investigation of all deaths in which the public interest is involved usually requires that nearly 20 per cent of all deaths in the population be the subject of medicolegal investigation. Increasing awareness of the importance of unsuspected trauma and poisons as a cause of death and better realization of the value of scientific evidence in court procedures is leading to reorganization of medicolegal procedures in many states. These changes, emphasizing as they do the importance of medicolegal pathology, are creating a demand for men trained in this field.

The staff of the Division of Legal Medicine, Department of Medicine of the University of Maryland Medical School, functioning as the Office of the Chief Medical Examiner of Maryland, is charged with the responsibility of all medicolegal investigations in this State. The Departmental facilities include laboratories for research as well as for the conduct of approximately one thousand post mortem examinations a year. There is a full time toxicologist with facilities for research and teaching in this field as well as in pathology. The Department is approved by the American Board of Pathology for one year of training for two residents. The Fellowships are open to American citizens, graduates of Class A medical schools with a minimum of one year of formal training in pathology. A basic stipend of \$2500 annually is provided.

Inquiries should be directed to Dr. Russell S. Fisher, Professor of Legal Medicine, 700 Fleet Street, Baltimore 2, Maryland.

THE RUTH LEE BRISCOE MEDICAL LIBRARY FUND

An alumnus of the School of Medicine, who for the past several years has presented the Medical Library with many gifts of journals and new books, has now established a fund for the use of the library. At the donor's request, this is to be known as the RUTH LEE BRISCOE LIBRARY FUND, and his own participation is to be kept anonymous.

The establishment of the fund in the name of Ruth Lee Briscoe, Librarian Emeritus, is a fine tribute to her 32 years of service in the Medical Library (1914-1946.) Other alumni of this period, prompted by pleasant memories of Mrs. Briscoe's friendliness, will undoubtedly wish to honor her and advance the cause of the library by making contributions to the fund.



MRS. RUTH LEE BRISCOE

According to the wise provisions of the donor, the Ruth Lee Briscoe Library Fund has been placed in a restricted account, "to be drawn on by the librarian for such purchases, repairs, preservations, etc., of books and journals as in her discretion are necessary and useful." Such an arrangement is favorable to the best interests of the library, especially if the fund can be made permanent by continuing gifts.

Use of the form below provides an easy way for alumni and others interested in the Medical Library to send contributions now or at any future time.

To the Librarian, Medical Library, University of Maryland, Lombard & Greene Streets, Baltimore 1, Maryland

Enclosed is my contribution of \$..... for the RUTH LEE BRISCOE LIBRARY FUND

Please send me a yearly reminder to help make the fund permanent.....

MAKE CHECKS PAYABLE TO
UNIVERSITY OF MARYLAND
SCHOOL OF MEDICINE

Name.....

Address.....
.....

Contributors should send gifts in the name of "The Ruth Lee Briscoe Library Fund, University of Maryland," % The Medical Library, Lombard and Greene Streets, Baltimore 1, Maryland.

Checks should be made payable to the University of Maryland School of Medicine.

MARYLAND SOCIETY FOR MEDICAL RESEARCH

Continuing Activities Considered Vital for Progressive Research Program

The Maryland Society for Medical Research, originally organized to defend Medical Research and the use of experimental animals, has seen a continuing need for educational programs. As a result of this, the Society has increased its activities during the past year. Several tours of the Bressler Research Laboratories and the University Hospital were organized for groups of high school students and colleges listed below.

Baltimore City College.....	Science Club
Garrison Junior High School.....	Science Club
Goucher College.....	Biology Class
Seton High School.....	Biology Club
Towson Senior High School.....	Science Club
Western High School.....	Biology Club

These tours were to acquaint the student with medical research techniques emphasizing the types of animals used, what they contribute toward the solution of the problem and how the results support the general public welfare. The tour included the mouse colony; cancer experimental studies and laboratories emphasizing physiologic experiments relating to stress.

The Society's motion picture "Frontiers in Medical Research" has also been frequently shown, not only in connection with various tours but before numerous societies. The film is available for showing before lay groups throughout the State.

In cooperation with the Women's Auxiliary of the Baltimore City Medical Society, the Maryland Society for Medical Research is engaged in producing a motion picture designed to encourage high school girls in nursing as a career. It is expected that the film will be ready for showing late in 1953.

ELECTED TO SOCIETY FOR VASCULAR SURGERY

Dr. R. Adams Cowley, class of 1944, and currently Assistant in Thoracic Surgery and Assistant Director of Experimental Surgery, has been elected a member of the Society for Vascular Surgery.

NAMED FELLOW IN NEURO-PATHOLOGY

Dr. Ursula Slager, class of 1952, has been recently appointed a Hitchcock Fellow in neuro-pathology for the year 1953-54. Dr. Slager will continue her studies in the division of neuro-pathology at the School of Medicine.

STAFF MEMBERS PARTICIPATE IN PHARMACY REFRESHER COURSE

The University of Maryland School of Pharmacy in cooperation with the Maryland Pharmaceutical Association offered a refresher course for retail pharmacists. The course was held in the Kelly Memorial Building on the campus in Baltimore, Thurs-

day, May 14th. This course was designed as a public service of the University of Maryland to inform pharmacists of new developments in dermatologic and ophthalmologic preparations. The professional programs presented to pharmacists have shown an intensification in recent years because of significant changes in the practice of pharmacy and in advances made in medicine.

The program included conferences on dermatologic preparations, which in part were conducted by Dr. Harry M. Robinson, Jr., Associate Professor of Dermatology. Dr. Howard M. Bubert discussed "Allergy vs. Primary Irritation."

An afternoon session on Ophthalmology was in charge of Dr. George B. Hager. "The Physiology of the Eye in Reference to Modern Therapy" was discussed by Dr. J. E. Brumbach, Jr., Instructor in Ophthalmology at the School of Medicine. Other programs were presented by Dr. Ronald M. Wood, Professor of Bacteriology, School of Pharmacy, and Dr. Donald E. Shay, School of Dentistry and Dr. Richard H. Barry, Director, Pharmaceutical Development with the Schering Corporation, Bloomfield, New Jersey.

NEW AUTOPSY LAW

Largely through the efforts of Senator John Grason Turnbull of Baltimore County and following the suggestion of the Maryland Society of Pathologists, Incorporated, a new autopsy law was written into the Maryland Code. This law, recently signed by Governor McKeldin, principally concerns certain difficulties heretofore experienced in obtaining autopsy permits. The law is printed in its entirety below.

There are three salient features. First, the law defines the type of permission which is desired. Next, it eliminates confusion with regard to next of kin or claimants and lastly, it specifically defines who shall give permission if there be more than one claimant. This new law concerns only voluntary permission and in no way interferes with or modifies existing statutes relating to the medical examiner law or to the law relating to the disposal of unclaimed bodies through the Anatomic Board.

FELLOWSHIP ANNOUNCED

The Department of Clinical Pathology has recently announced the establishment of a Research Fellowship in Hematology made possible by a donation of \$15,000 by Mr. Morris S. Corman, Baltimore merchant, to the School of Medicine. Bequeathed in memory of Mrs. Anna Corman, this fund is to carry her name. In addition to supporting a fellowship, proceeds from the fund may also be used for the purpose of inviting distinguished investigators to lecture or to hold seminars on hematologic subjects. The lectures, when given, will be known as the Anna Corman Lectureship.

ANOTHER BUILDING SUCCUMBS TO PROGRESS

Lombard Street Intern Quarters Razed

The last of the 3 converted dwelling houses just west of the old University Hospital on Lombard Street has now been razed. Until recently this building housed the offices of the Western Health District of the Baltimore City Health Department. It was

formerly a part of the interns' quarters of the University Hospital, and is now an addition to the parking lot lying between the old hospital and an adjacent Plumbing Supply Co. The Western Health District has been transferred to offices in the old University Hospital Building which now functions as a dispensary.

TELEVISION NOTE

Mr. D. L. Provost, Vice-president in charge of television and radio of the Hearst Corporation, wrote a letter about this program which contained some important information to the School of Medicine.

The University weekly television program "Live and Help Live" took a summer recess beginning in May and will resume during the week of September 6. In part Mr. Provost's letter contained the following:

"As you know, in order to carry this very important show we (WBAL-TV) canceled an NBC network commercial program during this past season. We are prepared to do this again for the full 1953-54 season.

I want to take this opportunity to express not only the gratitude of WBAL-TV, but the gratitude of the entire Hearst organization to the University for making it possible for this vital program to be brought to the Baltimore and Maryland television audience.

The February American Research Bureau Survey gives it a rating of 10 which, in our industry, for a commercial is considered a good rating. For a public service program, it is phenomenal. I expect that it is the highest rated public service program, either network or local, anywhere in the country. This can only mean that it has proved of extreme value to our audience. I wish you would thank, for us all, those people in your organization who have contributed so much to this program, and tell them we are looking forward with great anticipation in the resumption of the series next fall.

I hope, too, you will express our deepest thanks to Dr. Byrd for giving us this opportunity to serve our community."

Sincerely,

D. L. PROVOST (Signed)

ADDITION TO LIST OF CONTRIBUTORS

*Alumni of the School of Medicine Generously Support A.M.A. Drive to
Benefit Medical Schools*

The School of Medicine received significant help from the American Fund for Medical Education and the American Medical Education Foundation during the year 1952-53. This assistance was made possible by the generosity of Alumni of the School of Medicine and other friends of medical Education. The funds received have been used toward the maintenance of adequate standards in the School of Medicine and to augment the educational program. All funds which have been received have been administered by the Dean in the rectification of certain difficulties and deficiencies occasioned by increasing costs of medical education. All funds have been employed within the spirit expressed by the donor.

Funds for the past year represent a significant gain over those contributed in pre-

Announcement

✓

The Doctor Julius Friedenwald

Memorial Lecture

will be given by

Dr. RICHARD K. GILCHRIST

*Professor of Surgery, University of Illinois,
College of Medicine*

on

The Principles in Surgical Treatment
of Carcinoma of the Colon

✓

Thursday, November 5th, 1953, 8.30 P.M.

At the University of Maryland

School of Medicine

Chemical Hall—Main Building.

N.E. Cor. Lombard and Greene Sts.

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training in 1942 would produce
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vious years. The following Alumni and friends of the School of Medicine have contributed. Their generosity and interest in the School of Medicine is hereby gratefully acknowledged by students and Faculty.

Dr. Richard C. Allsopp, class of 1943
Dr. Walter L. Bailey, class of 1940
Dr. Stanley P. Balcerzak, class of 1925
Dr. James H. Bates, class of 1907
Dr. Bernard Botsch, class of 1929
Dr. Joseph J. Bowen, Jr., class of 1941
Dr. Archie R. Cohen, class of 1930
Dr. Jacob H. Conn, class of 1929
Dr. Arthur A. Cope, class of 1925
Dr. Ernest I. Cornbrooks, Jr., class of 1935
Dr. Paul H. Correll, class of 1940
Dr. John B. Coughlin, class of 1943
Dr. W. Paul Dailey, class of 1929
Dr. Alfred H. Dann, class of 1943
Dr. H. Elias Diamond, class of 1926
Dr. George E. Dorman, class of 1934
Dr. Robert W. Farkas, class of 1944
Dr. Wylie M. Faw, Jr., class of 1930
Dr. Abraham Finegold, class of 1924
Dr. Samuel E. Ganz, class of 1932
Dr. Joseph M. George, Jr., class of 1938
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Dr. Benjamin H. Long, class of 1912

Dr. Frank F. Lusby, class of 1926
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Dr. W. Raymond McKenzie, class of 1915
Dr. Elizabeth H. McNeal, class of 1940
Dr. John L. Messmore, class of 1909
Dr. Karl J. Myers, class of 1923
Dr. Carl Pigman, class of 1936
Dr. William H. Pomeroy, II, class of 1943
Dr. Elton Resnick, class of 1937
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Dr. Henry Rothkopf, class of 1938
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Dr. Alexander Slavcoff, class of 1931
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Dr. Benjamin M. Stein, class of 1935
Dr. Russell A. Stevens, class of 1931
Dr. David Tenner, class of 1928
Dr. Frank J. Theuerkauf, class of 1924
Dr. A. S. Werner, class of 1930
Dr. James E. Wilson, class of 1912
Dr. Samuel B. Wolfe, class of 1926

Women's Auxiliary to the Medical and Chirurgical Faculty.

WBAL-TV RECEIVES CITATION

Station WBAL-TV of Baltimore recently received the Alfred I. duPont citation for distinguished service to the community through public service broadcasting and television presentations. WBAL-TV's public service work includes the University of Maryland's popular program "Live and Help Live."

ACKNOWLEDGMENT

The School of Medicine expresses its gratitude for a generous contribution presented by Dr. Frank A. Merlino, to the account of the Medical School. A member of the class of 1928, he resides at 225 Greenville Avenue, Johnston, Rhode Island.

PROFESSOR HONORED

Dr. Edgar B. Friedenwald, Professor of Clinical Pediatrics, Emeritus, was recently honored by his friends, colleagues and former students at the annual Pediatric Symposium. For many years Dr. Friedenwald was Chief of Pediatrics at Mercy Hospital.

POST GRADUATE COMMITTEE SECTION

POST GRADUATE COMMITTEE, SCHOOL OF MEDICINE

HOWARD M. BUBERT, M.D., *Chairman and Director*

Elizabeth Carroll, *Executive Secretary*

Post Graduate Office: Room 600

29 South Greene Street

Baltimore 1, Maryland

POSTGRADUATE LECTURE COURSE IN BASIC SCIENCES TO BE OFFERED AGAIN IN 1953-54

For the third consecutive year, 1953-54, a course in THE BASIC SCIENCES AS APPLIED TO THE PRACTICE OF MEDICINE will be offered, according to an announcement by the Postgraduate Committee of the University of Maryland School of Medicine. The decision to repeat the course next fall was based on the response to a questionnaire sent to all those enrolled in 1952-53. When asked whether, in their opinions, the course should be repeated, all those who replied, unanimously recommended such action.

A considerable body of experience has now accumulated which will be valuable in formulating plans for the coming year. The questionnaires contained many helpful suggestions, all of which have been given serious consideration by the Committee and the lecturers responsible for the course. Special attention, however, is called to the fact that the course is concerned primarily with the fundamental biological concepts on which the practice of medicine rests and how these concepts apply to such practice. It is not intended to give specific instructions as to how to proceed in definite clinical situations. Such instruction is available at the numerous clinical pathologic conferences, seminars, symposia, etc., sponsored by local hospitals and medical societies.

Whenever possible, it is planned to have the program for any one session divided between a lecturer who will present the basic aspects of the subject under consideration, and a clinician who will discuss the applications of these concepts. The lectures will also be supplemented from time to time with carefully selected motion pictures.

Judging from past experience, the course appeals to 2 groups of physicians, younger men who take it as part of the residency training program offered by their hospitals, and general practitioners who want to be brought up to date in the ideas that are germinating in the basic sciences. Particular stress will be laid on the changes which have occurred in this area within the last 10 years or so. In this way, the course becomes a helpful review in the basic sciences for those men who are preparing for their board examinations.

Biochemistry, physiology, pharmacology, embryology, immunology, neuroanatomy, neurophysiology and histology are included, while gross anatomy and pathology

are not. The 2 latter subjects are thoroughly covered in other courses in these special fields and offered by the School of Medicine, University of Maryland. In the past, lecture schedules have included such subjects as the physiology of hypertension, its pharmacologic and surgical control, natural and immune mechanisms of host resistance, practical aspects of neurophysiology and the pharmacology of the antibiotics and antihistaminics, to mention but a few.

Thirty-two 2-hour meetings will be held, as in the past, on Wednesday at 4:00 P.M., except during University holidays, on the second floor, Bressler Building, 29 South Greene Street. The greater part of the enrollment usually consists of physicians in training in the Baltimore area, but any qualified and interested physician is welcome. Many local practitioners have taken advantage of this opportunity—and the course is open to the graduates of any approved medical school on application to the Committee.

Arrangements are in charge of a subcommittee consisting of Dr. Otto C. Brantigan, Dr. C. Jelleff Carr, Dr. Frank H. J. Figge and Dr. Dietrich C. Smith, Chairman.

The lecture schedule as well as the lecturers for the coming session will be announced shortly and may be obtained on request from the Office of the Postgraduate Committee, 6th Floor Bressler Building, 29 South Greene Street, Baltimore 1, Maryland. A detailed prospectus, further information and application blanks may be obtained from the same source. Telephone inquiries are also welcome. Call Mrs. Elizabeth Carroll, Plaza 2-1100, Extension 278. Tuition is \$50.00 and is payable in advance. Registration will be held on September 21 and 22, 1953 from 9:00 A.M. to 4:00 P.M. at the Postgraduate Office, and the first lecture will be held on Wednesday, September 23, 1953.

Those who attend at least 27 of the regularly scheduled meetings shall be eligible, on vote of the Postgraduate Committee, to receive a certificate. Such certificates are issued on request to those regularly enrolled, on payment of an additional fee of \$7.50 and on signing a statement that the required number of lectures have been attended.

Faculty

Otto C. Brantigan, M.D., Professor of Surgical Anatomy, Clinical and Thoracic Surgery

C. Jelleff Carr, Ph.D., Professor of Pharmacology

Frank H. J. Figge, Ph.D., Professor of Anatomy

John C. Krantz, Jr., Ph.D., Professor of Pharmacology

William S. Love, M.D., Professor of Clinical Medicine

Robert H. Oster, Ph.D., Professor of Physiology (Dental School)

Dietrich C. Smith, Ph.D., Professor of Physiology

George H. Yeager, M.D., Professor of Clinical Surgery

James G. Arnold, M.D., Associate Professor of Neurological Surgery

Howard M. Bubert, M.D., Associate Professor of Medicine

Frederick P. Ferguson, Ph.D., Associate Professor of Physiology

Milton S. Sacks, M.D., Associate Professor of Medicine

Theodore E. Woodward, M.D., Associate Professor of Medicine

Edward Steers, Ph.D., Associate Professor of Bacteriology

Marie A. Andersch, Ph.D., Assistant Professor of Biochemistry in Medicine

Raymond M. Burgison, Ph.D., Assistant Professor of Pharmacology

John DeCarlo, Jr., M.D., Assistant Professor of Roentgenology
 William K. Diehl, M.D., Assistant Professor of Gynecology
 Sidney Scherlis, M.D., Assistant Professor of Medicine
 Merrill J. Snyder, Ph.D., Assistant Professor of Medicine in Clinical Bacteriology

Robert E. Bauer, M.D., Associate in Medicine
 John M. Dennis, M.D., Associate in Medicine

Francis Borges, M.D., Fellow in Medicine

Schedule of Lectures

1953

Sept. 23	Mechanism of the Action of Drugs	Dr. Krantz
30	Physiology of the Heart	Dr. Smith
	Motion Picture: THE HEART (Searles)	
Oct. 7	Physiology of Congestive Heart Failure	Dr. Smith
	Angiocardiography	Dr. DeCarlo
14	The use of Drugs in Congestive Heart Failure	Dr. Krantz
	Clinical Management of Congestive Heart Failure	Dr. Scherlis
21	The Physiology of Forward Failure of the Circulation	Dr. Smith
	Clinical Management of Cardiac Emergency	Dr. Scherlis
28	The Physiology of Hypertension	Dr. Smith
	Surgical Treatment of Hypertension	Dr. Brantigan
Nov. 4	Pharmacology of Hypertension	Dr. Burgison
	Medical Management of Hypertension	Dr. Borges
11	Pharmacology of Peripheral Vascular Disease	Dr. Burgison
	Surgical Treatment of Peripheral Vascular Disease	Dr. Yeager
18	Physiology of Respiration	Dr. Oster
	Clinical Evaluation of Respiratory Function	Dr. Brantigan
25	Thanksgiving Holidays—No lecture scheduled	
Dec. 2	Factors Controlling Acid-Base Balance	Dr. Andersch
	Clinical Aspects	Dr. Bauer
9	Electrocardiography	Dr. Ferguson
	Electrocardiogram in Clinical Medicine	Dr. Love
16	Blood Group Immunology	Dr. Sacks
23	Christmas Holidays—No lecture scheduled	
30	Christmas Holidays—No lecture scheduled	

1954

Jan. 6	Physiology of the Body Fluids	Dr. Ferguson
	Clinical Aspects	Dr. Sacks
13	Physiology of the Kidney	Dr. Ferguson
	Motion Picture: KIDNEY IN HEALTH (Lilly)	
20	Physiology of the Kidney, continued	Dr. Ferguson
	Motion Picture: KIDNEY IN DISEASE	
27	Humoral Control of Electrolyte and Water Balance	Dr. Smith
	Motion Picture: ACTH (Armour)	
Feb. 3	Physiology of the Adrenal Cortex	Dr. Smith
	The Use and Abuse of Cortical Steroids and ACTH	Dr. Sacks
10	The Physiology of the Sex Hormones	Dr. Smith
	Motion Picture: PHYSIOLOGY OF MENSTRUATION (Schering)	
17	The Physiology of Fertilization	Dr. Smith
	Clinical Aspects of Infertility	Dr. Diehl

	24	Physiology of the Menopause	Dr. Smith
		Clinical Management of the Menopause	Dr. Diehl
Mar.	3	The Organizer Concept and its Application to Practical Embryology	Dr. Figge
		Motion Picture: EMBRYOLOGY OF THE GASTROINTESTINAL TRACT (Columbia University)	Dr. Brantigan
	10	Developmental Anomalies	Dr. Figge
		Motion Picture: ANOMALIES OF THE GASTROINTESTINAL TRACT AND SURGICAL TREATMENT	Dr. Brantigan
	17	Some Practical Aspects of Cancer Etiology and Therapy	Dr. Figge
			Dr. Bauer
	24	Radioactive Isotopes in Medicine	Dr. Figge
			Dr. Dennis
	31	Vitamines, Anti-Vitamines and Hematopoiesis	Dr. Sacks
Apr.	7	Natural Mechanisms of Host Resistance	Dr. Snyder
	14	Specific Immune Mechanisms of Host Resistance	Dr. Snyder
	21	Immune Factors in Clinical Disease	Dr. Woodward
	28	Clinical Aspects of Neurophysiology	Dr. Arnold & Staff
May	5	Clinical Aspects of Neurophysiology	Dr. Arnold & Staff
	12	Clinical Aspects of Neurophysiology	Dr. Arnold & Staff
	19	Pharmacology of the Antibiotics	Dr. Carr
		Mechanism of the Action of Antibiotics	Dr. Steers
	26	Pharmacology of the Antihistaminics	Dr. Carr
		Antihistaminics in Allergy	Dr. Bubert

THE END OF THE TV SEASON

On Tuesday evening, May 16, the final program of "Live and Help Live" was presented over station WBAL-TV by Dr. Thomas R. O'Rourke, Professor of Otolaryngology; Dr. Thomas D. Michael, Assistant in Otolaryngology; and Dr. Eugene B. Rex, Assistant Resident in Otolaryngology. The presentation was excellent. In closing, Judge William P. Cole, Jr., Chairman of the Board of Regents of the University of Maryland, complimented "Live and Help Live," called attention to the excellent public acceptance achieved, and the fine service to the community that it has represented. He referred also to the high calibre of the presentations and expressed his appreciation for the very real contribution made by the participants and the considerable work that these programs represented.

This year, a summer holiday has been declared, but in September, the series will resume and we believe that it will reach new heights of excellence after the period of rest, and as a result of the experience gained in the past. We feel sure that the fine support given the venture by everyone will be continued and even increased.

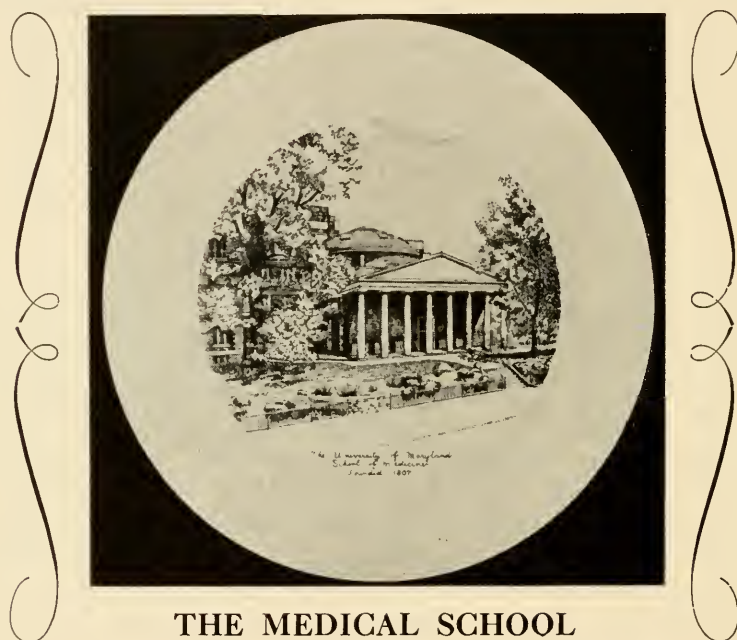
It would be remiss to fail to mention the enthusiastic cooperation given us by WBAL-TV, and particularly the tireless and ever-patient leadership supplied by Anne Holland, who has done a truly superb job.

AN AWARD

On April 16, 1953, over the Associated Press wires, the following announcement was made:

Columbus, Ohio—Two Baltimore television programs have been singled out for awards by the seventeenth exhibition of educational radio and television programs.

The exhibition sponsored by the Institute for Education by Radio and Television is being held at Ohio State University this week. Getting a first place award was the University of Maryland Medical School and Station WBAL-TV for the program "Live and Help Live." The citation called it an outstanding presentation which helps remove common fears "by pointing up the benefits of good health which result from the contributions of medical research." Getting an honorable mention was Johns Hopkins University and Station WAAM-TV for the program "The Johns Hopkins Review." The citation said the program brings current scientific research to the public in appealing and understandable fashion, and it said Johns Hopkins' Lynn Poole was to be especially commended.



THE MEDICAL SCHOOL AND HOSPITAL PLATES

Plates of the School of Medicine; the old Hospital and the new Hospital; University of Maryland, are available. These white plates are 10 inches in diameter with the design printed in black.

The price is \$2.50 each, plus fifty cents insurance and postage in the U. S. A.

Insurance and postage for foreign mail is one dollar. Please send your order, with check, stating the plates desired to Mrs. Bessie M. Arnurius, Box 123, University Hospital, Baltimore 1, Maryland.

Checks should be made payable to the NURSES' ALUMNAE ASSOCIATION OF THE UNIVERSITY OF MARYLAND.

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Bulletin

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The names listed above are officers for the term beginning July 1, 1952 and ending June 30, 1953.

PRESIDENT'S LETTER

One of the most discussed topics pertinent to the nation's health needs has been the changeover of the Federal Security Agency to a new Department of Health, Education and Welfare headed by Mrs. Oveta Culp Hobby.

The medical profession has always been in favor of an independent Department of Health in the federal government with a secretary of Cabinet rank and has worked ceaselessly and tirelessly for over 50 years to accomplish this. The problem now is not just that of "public health needs" but with the growth of the Federal Security Agency it encompasses medical care for the entire country.

A nation's educational, housing and old-age security problems do in turn influence a nation's health problems but not so much so that social legislation should overshadow all else. Medical problems are for medical men to decide. The plans, as proposed by Oscar Ewing, wherein the federal government would have allowed a department unlimited powers for medical legislation with no recognized leaders in the medical field as assistants and advisors, were further steps toward socialized medicine. As such they could not be tolerated since this does not represent the best kind of medicine for the people.

In his address to the Special Session of the House of Delegates of the A.M.A. on March 14, 1953, President Eisenhower stated he does not like the word "compulsory" and is against the word "socialized." He added that it is going to be the philosophy of his administration for the next 4 years that the medical profession will provide the

services the country needs with the cooperation of the administration and not under its direction. Such an attitude is indeed edifying to us at this time.

Dr. Louis Bauer, President of the A.M.A., has expressed his approval of the present plan, stating it is a great improvement over the previous ones introduced in 1949 and 1950.

Mrs. Hobby will have as her Special Assistant a physician of wide non-governmental experience. Under the plan, the Special Assistant, a recognized medical leader, will have something to say about education and social security when they have any medical aspect whatever. He will also be the representative of the secretary at all interdepartmental hearings where health is to be discussed. He will further represent the secretary before congressional committees dealing with appropriations and budgets and will be the secretary's representative at international meetings involving health. The special assistant has considerable authority and as Dr. Bauer has noted—more authority than has ever been offered to the medical profession before.

With an administration whose philosophy is that as stated by the President, a capable secretary at its head, a thoroughly qualified medical leader as her assistant, the creation of this new governmental department should be a tremendous step forward along the road to providing the best in medical care for the American people.

D. J. PESSAGNO, M.D.

Chairman, Board of Directors

CLASS OF 1952, PROGRESS NOTE I

Returns from Questionnaire are Summarized Below

In April the Medical Alumni Association mailed to every member of the class of 1952 a small questionnaire concerning the future plans of each member. Returns are now complete, save for a few who have joined the ranks of missing alumni less than one year following their graduation.

In future years it will be the policy of the Medical Alumni Association to keep in touch with all alumni for at least 5 years following graduation. The information received from the questionnaire will be of great assistance to the Alumni Association and will of course be of great interest to members of the class of 1952 and those who will follow.

Dr. Charles B. Adams, Jr. will enter the specialty of internal medicine at the University Hospital in Baltimore.

Dr. Benjamin A. Adelstein will enter the specialty of general surgery at the University Hospital in Baltimore.

Dr. Charles G. Adkins is at present undecided but will enter general practice.

Dr. Richard E. Ahlquist, Jr. will enter the specialty of surgery at the University of California Hospital in San Francisco.

Dr. George C. Alderman has entered the University of Pennsylvania Post Graduate School of Medicine where he will study otolaryngology.

Dr. James W. Andrews will enter general practice but has not yet decided on the location of his office.

Dr. Daniel Bakal has accepted an assistant residency in medicine at the Sinai Hospital in Baltimore.

Dr. Timothy B. Baker will enter the specialty of Public Health and has enrolled under the New York State Practical Training Program at the Johns Hopkins School of Hygiene.

Dr. Osvaldo Berrios-Jimenez has accepted an assistant residency in internal medicine at the South Baltimore General Hospital in Baltimore.

Dr. William M. Brown, Jr. will be an assistant resident in surgery at the Grady Memorial Hospital in Atlanta, Georgia.

Dr. Daniel Clyman has accepted an assistant residency in internal medicine at the Kingsbridge Veterans Administration Hospital, Bronx, New York.

Dr. Stuart P. Culpepper will enter general practice somewhere in Central Florida, the location not yet decided.

Dr. Andrew J. Devlin will enter the specialty of obstetrics and gynecology with an assistant residency at the St. Agnes Hospital in Baltimore.

Dr. Andrew M. Diggs will be assistant resident in radiology at the Roosevelt Hospital in New York City.

Dr. Anthony J. Di Giovanni has accepted an assistant residency in anesthesiology at the University of Pennsylvania Hospital in Philadelphia.

Dr. Robert A. Douglas will go on active duty for a year with the U. S. Navy at the U. S. Naval Hospital in San Diego, California. Dr. Douglas will then enter general practice.

Dr. Robert C. Douglass, Jr. has accepted an assistant residency in internal medicine at the Wayne County General Hospital, Eloise, Michigan.

Dr. William S. Dunford, Jr. will continue as an assistant resident in surgery in the U. S. Public Health Service. Dr. Dunford is currently stationed at Seattle, Washington.

Dr. Herbert L. Eckert will serve as an assistant resident in pediatrics at the University Hospital in Baltimore.

Dr. Lawrence D. Egbert plans to enter the specialty of general surgery. Dr. Egbert will enter the military service in the U. S. Navy about July 1st.

Dr. Lee W. Elgin, Jr. has accepted an appointment as assistant resident in medicine at the University Hospital in Baltimore.

Dr. Charles S. Elliott will serve as assistant resident in general surgery at the Edward W. Sparrow Hospital in Lansing, Michigan.

Dr. Jack Fine will serve as assistant resident in anesthesiology at the Presbyterian Medical Center of Columbia University in New York City.

Dr. Joseph P. Fisher has decided to enter general practice and probably will practice in McKeesport, Pennsylvania.

Dr. Louis A. Fritz will practice internal medicine as an assistant resident at St. Joseph's Hospital in Baltimore.

Dr. Charles F. Gilliam will enter general practice following a year of training at the Bluefield Sanatorium, Bluefield, West Virginia.

Dr. Paul H. Gislason has accepted an assistant residency in general surgery at the Ancker Hospital in St. Paul, Minnesota.

Dr. Luis F. Gonzales-Rivera will serve as an assistant resident in internal medicine at the University Hospital in Baltimore.

Dr. Jay C. Gore will enter general practice his office being located at 688 Broadway, Bedford, Ohio.

Dr. James R. Grabill will enter general practice his office being located at 1945 West Baltimore Street, Baltimore.

Dr. David E. Graham has accepted an assistant residency in surgery at the Sampson Memorial Hospital, Clinton, North Carolina.

Dr. William R. Greco will serve as assistant resident in obstetrics and gynecology at the University Hospital in Baltimore.

Dr. Robert A. Grubb has not announced his future plans. Dr. Grubb is currently at the Harrisburg Polyclinic in Harrisburg, Pennsylvania.

Dr. Leon D. Hankoff has accepted an assistant residency in psychiatry at the Kings County Hospital, Brooklyn, New York.

Dr. William B. Harris will enter general practice, his office being located at 2146 Huntington Drive, San Moreno, California.

Notice



UNIVERSITY OF MARYLAND
MEDICAL ALUMNI ASSOCIATION

Alumni Reunion and Dinner

TUESDAY, OCTOBER 27, 1953

ATLANTA BILTMORE HOTEL

7 P.M.



This dinner will be held in conjunction with the Annual Meeting of the Southern Medical Association. All Alumni in the area included in the membership of the Southern Medical Association have been circularized. If you do not receive a card, and if you desire to attend this important function, please communicate with Mrs. Minnette E. Scott, Alumni Secretary at once. Reservations are necessary, and should be received by October 20.

Join your Southern friends and fellow alumni in this fellowship dinner and gather some fresh news about your Alma Mater. Remember,—Atlanta Biltmore Hotel, Tuesday, October 27 at 7:00 P.M. Make your reservations now.



Dr. William L. Heimer will serve as an assistant resident in pediatrics and medicine at the University Hospital in Baltimore. Dr. Heimer intends to enter general practice.

Dr. C. Martin Holmes will serve as an assistant pathologist at the Jackson Memorial Hospital in Miami, Florida. Dr. Holmes plans to continue his training in general surgery.

Dr. William B. Hudgins will serve as assistant resident in medicine at the Grady Memorial Hospital, Atlanta, Georgia.

Dr. DeWitt T. Hunter, Jr. has accepted an appointment as assistant resident in pathology at the Johns Hopkins Hospital, Baltimore.

Dr. L. Virginia Hunter will serve as assistant resident in pediatrics at the University Hospital, Baltimore.

Dr. Irvin Hyatt will begin the practice of internal medicine as an assistant resident at the Sinai Hospital in Baltimore.

Dr. Franklin L. Keller will leave for Zorzor, Liberia, Africa where he will serve as a medical missionary.

Dr. Frank M. Kline is awaiting military duty with the U. S. Army. After his period of service he intends to seek an assistant residency in internal medicine.

Dr. Joseph A. Knell, Jr. will serve as assistant resident in obstetrics and gynecology at St. Joseph's Hospital, Baltimore.

Dr. John M. Krager will serve as assistant resident in pediatrics at the University Hospital, Baltimore.

Dr. Irving Kramer has been appointed assistant resident in pediatrics at the Sinai Hospital, Baltimore.

Dr. Morton M. Krieger has been appointed assistant resident in internal medicine at the Mt. Sinai Hospital in Cleveland, Ohio.

Dr. Herbert W. Lapp will enter general practice at 3321 Frederick Avenue, Baltimore.

Dr. Charles H. Lightbody will continue the second year of a 2 year rotating internship at the Worcester City Hospital, Worcester, Massachusetts.

Dr. John N. McKay will enter general practice at 3325 Frederick Avenue, Baltimore.

Dr. Richard Y. Olsen will enter general practice in North Hollywood, California.

Dr. James S. Phelps, Jr. will continue his training in general practice at the Bluefield Sanatorium, Bluefield, West Virginia. Dr. Phelps reports that he will probably practice somewhere in North Carolina upon completion of his training.

Dr. William A. Pillsbury, Jr. will continue his training at the Bon Secours Hospital leading to general practice.

Dr. Gilberto Ramirez-Santisteban will go on duty with the U. S. Air Force about August 1st being stationed somewhere in Alabama. Dr. Ramirez has expressed his intentions of continuing his training in internal medicine.

Dr. Jonas R. Rappeport will serve as an assistant resident in psychiatry at the University Hospital, Baltimore.

Dr. Julian W. Reed expects to enter the U. S. Navy, probably making it a career, preferring to specialize in internal medicine.

Dr. William D. Rosson has decided to enter the general practice of medicine probably in the Hyattsville or College Park Area.

Dr. Bella F. Schimmel has accepted an appointment as assistant resident in pediatrics at the University of California (Los Angeles) in the Marion Davies Clinic, West Los Angeles, California.

Dr. John O. Sharrett has accepted an appointment as assistant resident in neurologic surgery at the University Hospital in Baltimore.

Dr. Mahlon J. Shoff will serve as assistant resident in ophthalmology at the U. S. Public Health Service Hospital in Lexington, Kentucky. Dr. Shoff is currently stationed in Seattle, Washington.

Dr. Richard A. Sindler has accepted an assistant residency in radiology at the Johns Hopkins Hospital, Baltimore.

Dr. B. Dandridge Smith, Jr. will enter general practice, his address being Box 266, Man, West Virginia.

Dr. Aubrey C. Smoot, Jr. will enter general practice in Georgetown, Delaware.

Dr. Alvin A. Stambler will continue as assistant resident in pediatrics at the Baltimore City Hospitals, Baltimore.

Dr. Robert J. Trace has accepted an assistant residency in gynecology and obstetrics at the Charity Hospital in New Orleans, Louisiana.

Dr. Belk Connor Troutman will enter general practice at Grifton, North Carolina.

Dr. Scott P. Wallace will go on active duty with the U. S. Army and will be assigned to the Tripler Army Hospital.

Dr. Harry M. Walsh has accepted an assistant residency in gynecology and obstetrics at the Johns Hopkins Hospital, Baltimore.

Dr. John L. Watters will be located at the University of North Carolina Infirmary, Chapel Hill, N. C. Dr. Watters will enter general practice.

Dr. Howard N. Weeks has accepted an appointment as Ship's Surgeon with the Grace Lines during the summer of 1953. He then intends to practice in Hagerstown, Md.

Dr. John R. Wilkinson, Jr. currently on duty with the U. S. Army expects a transfer to the Far Eastern Command.

Dr. Donald A. Wolfel expects to go on active duty in the U. S. Army where he hopes to continue his post graduate training in medicine.

Dr. William R. Wolverton will continue as an assistant resident in surgery at the Charleston General Hospital, Charleston, West Virginia.

The addresses for the following members of the class of 1952 are unknown:

Dr. Raymond M. Atkins	Dr. Robert G. Love
Dr. Edward H. Bergofsky	Dr. William A. Mathews
Dr. Jack A. Bridges	Dr. Benton B. Perry
Dr. Lowell E. Brittain	Dr. David Rasmussen-Taxdal
Dr. James B. Brooks	Dr. Malcolm L. Robbins
Dr. John E. Carroll, Jr.	Dr. George H. Smith
Dr. Jack O. Carson	Dr. Norton Spritz
Dr. Phin Cohen	Dr. Charles R. Starling
Dr. Michael J. Foley	Dr. Carlos N. Vicens
Dr. Robert W. Gebhardt	Dr. Bryan P. Warren, Jr.
Dr. Clarence E. Graybeal	Dr. Albert J. Wildberger
Dr. Romulus V. Houck, Jr.	

Members of the class of 1952 who know of the whereabouts of the doctors listed above, might urge them to communicate with the Medical Alumni Association and to return their questionnaires. In 1954 the class of 1952 will again receive a circular letter as will the class of 1953, who by that time will have completed nearly all of the internship year.

Below is a comprehensive summary of just what the class of '52 has planned to do. It would appear that the majority are interested in medicine, general practice, general surgery and pediatrics with many other specialties represented.

Internal Medicine.....	16	General Surgery.....	10
General Practice.....	17	Pediatrics.....	7
Obstetrics and Gynecology.....	5	Undecided.....	5
Psychiatry.....	2	Pathology.....	2
Radiology.....	2	Otolaryngology.....	1
Public Health.....	1	Anesthesiology.....	2
Medical Missionary.....	1	Neurosurgery.....	1
Ophthalmology.....	1	Military Medicine (permanent career).....	1



Carroll Memorial Tablet at University of Maryland

DOCTOR CARROLL MEMORIALIZED

One of the most distinguished alumni of the University of Maryland's School of Medicine, Dr. James Carroll, was recently honored at the dedication ceremonies of Camp Lezear, Quemados de Marianao, Cuba, famed experimental site of Dr. Walter Reed and his crusade against yellow fever.

Dr. Carroll, a graduate of The University of Maryland School of Medicine in 1891, was a member of the medical staff directed by Dr. Reed in 1900 to ascertain the cause of the dreaded tropical disease. Dr. Carroll is known to have willingly subjected himself to infection in an attempt to prove the mosquito to be the carrier of yellow fever.

Therefore he was honored at the ceremonies by a fellow graduate of the Maryland Medical School, Dr. Jose R. Echeverria of Cuba, class of 1915, who placed a wreath under the bronze profile of Carroll as it was unveiled at the ceremonies.

Camp Lezear, named for Dr. Jesse W. Lezear, who gave his life while attempting to prove the theory of Dr. Carlos Finlay of Cuba, that yellow fever was carried by the mosquito.

The camp site, selected by Dr. Walter Reed, was located in an isolated area, approximately one mile from Camp Columbia which is in close proximity to Havana.

On this site Dr. Reed proceeded to complete the work begun by Drs. Lezear and Finlay. Working only with volunteers, Dr. Reed soon proved the mosquito to be the carrier of the disease which had isolated Havana for decades.

Following the completion of the experiments by Reed, the camp was abandoned, and soon its exact location was forgotten. With the passage of time, another location, much nearer to Camp Columbia, was assumed to be the original site.

However, a recent survey by Dr. Philip S. Hench of the Mayo Clinic, Rochester, Minnesota, uncovered the original camp, and found there one of the two experimental buildings used by Dr. Reed during his work.

The camp has been reconstructed, and a small park has been established in commemoration of Drs. Finlay, Delgado, Reed, Carroll, Lezear, Agramonte and Wood, all of whom served as guinea pigs during the experiments.

RECORDINGS AVAILABLE FOR HISTORIC RESEARCH

Alumni Honor Award Candidates Have Been Placed Permanently on Record

These recordings along with accounts of the Alumni Honor Award Proceedings as carried in the Bulletin are designed to provide a nucleus of historic information relating to the prominent Alumni who have been recipients of the Honor Award and Gold Key. Recordings are on file in the Medical Library.

BULLETIN GIFT TO CLASS OF 1953

The Board of Directors of the Medical Alumni Association as customary, has awarded a free subscription to the Bulletin of the School of Medicine and free membership in the Medical Alumni Association to the class of 1953. In extending congratulations to the class, retiring President Marsh called attention to the many opportunities the Alumnus has in furthering the interests of his Alma Mater. The Alumni Association, dedicated to this interest has therefore seen fit to honor the class of 1953 with a subscription to the Bulletin of the School of Medicine.

DOCTOR SUFFERS LOSS AT REUNION

Dr. Frederick W. Mayer of 356 Cedar Street, St. Paul 1, Minnesota, suffered the loss of a yellow gold ring with a center diamond and two garnets on June 4, 1953. As far as is known, Dr. Mayer lost the ring at the annual Alumni banquet. If found, please communicate with him at the above address.

REMINDER!

Funds from the 1952 contribution to the National Fund for Medical Education (including the American Medical Education Foundation—A.M.A. sponsored) have been put to good use by the School of Medicine according to Dean H. Boyd Wylie.

The American Medical Education Foundation is again soliciting contributions from physicians for the general advancement and improvement of medical education. Contributions may be sent to the American Medical Education Foundation, 535 North Dearborn Street, Chicago 10, Illinois. Deductable? Of course!

A 1950 INSPIRATION

Class of 1950 Inaugurates Newsletter

Shortly after graduation the class of 1950 resolved to continue interest among its members through a newsletter. Through the efforts of Wilbert McElvain the first newsletter was published. However, the Dalys took up the reins in 1953 and produced a very creditable 7 page summary, which included just about everything which has happened individually and collectively to the class of 1950.

Aside from a complete compilation of the accomplishments of the class, numerous interesting personal items are listed in great detail. The editorial with which the Dalys (Dr. Harold and Dr. Miriam) begin their account follows:

"Sorry we're a little late, but the job took a little longer than we expected. Then, of course, there was a slight interruption in publication by the arrival of little John in January.

Compiling this newsletter has been lots of fun and we will attempt edition no. 3 next year. We are quite pleased with the response to our questionnaire and were able to contact all but two members of the class. We have enjoyed receiving your numerous letters, birth and wedding announcements and Christmas cards.

The Alumni office (Medical Alumni Association, University of Maryland School of Medicine, Lombard and Greene Streets, Baltimore 1, Maryland—Ed. note), incidentally, informs us that ours is the only class with such a newsletter. Hope we'll be able to keep the ball rolling year after year.

We have tried to be accurate in our write-ups and hope that you will inform us of any errors so that corrections can be made for next year."

Ed. Note: The accomplishments of the class of 1950 might well serve as a challenge for previous or subsequent classes. The newsletter is on file in the Bulletin office and can be made available to anyone desiring to review it.

1953 REUNION

Members of the Alumni Association gathered on Thursday, June 4, 1953, in the Lecture Hall of the new Psychiatric Institute for an address by Dr. Jacob E. Finesinger, Professor of Psychiatry. Dr. Finesinger emphasized the new position which psychiatry had taken in the School of Medicine and outlined his undergraduate and graduate programs.

Following Dr. Finesinger's address, Dr. Emil Novak of the class of 1904 was presented the Alumni Honor Award. Dr. Novak then spoke at length on some of the interesting personalities of a half century ago. Preceding Dr. Novak's presentation and address a luncheon was served in the Recreation Room of the Psychiatric Institute. This was followed by the annual business meeting of the Medical Alumni Association.

During the late afternoon numerous class reunions were held throughout the City. The annual banquet at the Lord Baltimore Hotel was given in honor of the class of 1953. The class of 1903 received a tremendous ovation as members filed to the ros-

trum to receive their 50-year certificates from Dr. James T. March, President of the Medical Alumni Association.

Officers to serve include:

Dr. Louis H. Douglass—President

Dr. John Mace, Jr.

Dr. John M. Beachley }—Vice-presidents

Dr. C. Wilbur Stewart }

Dr. Frank J. Geraghty—Member of the Board of Directors

Dr. Emanuel Schimunek—Member of the Nominating Committee

ALUMNUS PROMINENT IN NATIONAL MEDICAL AFFAIRS

Serves as Secretary on General Practice, A.M.A.

Dr. Eugene Irving Baumgartner, class of 1931, has recently been elected Secretary of the Section on General Practice of the American Medical Association for a 4 year term. Dr. Baumgartner, an active practitioner in his home town of Oakland, Maryland, has found time for diverse medical interests of a most important and contributory kind.

Following his preliminary education in the University of Maryland at College Park, Dr. Baumgartner received his medical degree in 1931. After interning at the Mercy Hospital, he began practice in Oakland, Maryland, in 1933. Becoming interested in 1948 in the newly formed American Academy of General Practice, he was one of the leaders responsible for the organization of the Maryland Chapter, and served as Secretary and Treasurer for the years 1949 through 1951. In 1952 he was elected President of the Maryland Academy.



Dr. E. I. Baumgartner

Dr. Baumgartner has been interested in a number of national organizations, being a member of the Scientific Assembly Commission of the American Academy of Gen-

eral Practice. He was elected a member of the Board of Directors in 1953 and has also served in a similar capacity with respect to the Section on General Practice of the American Medical Association. Dr. Baumgartner manages to conduct his busy general practice and keep his interest in national medical affairs. In addition he found time to help organize the Garrett County Memorial Hospital in Oakland of which he has been Treasurer of the Board since 1950. Recently he was elected President of the Staff of this Hospital. In 1939 he was elected a member of the Town Council and since 1942 has served as President. He is not only well-known in the State but throughout the Nation as well. His activities are not limited to medical organizations alone for he has been a member of the Oakland, Maryland, Rotary Club, serving as President in 1945. He is a member of Sigma Alpha Epsilon Social Fraternity and the Phi Beta Pi Medical Fraternity.

Dr. Baumgartner is an intensely interested physician, a hard worker and an inveterate traveler with a forceful personality. He may always be seen in the active segment of any worthwhile endeavor.

ITEMS

Dr. C. Hal Ingram, class of 1943, now of High Point, North Carolina presented a paper at the annual meeting of the Medical Society of the State of North Carolina on May 13, 1953. The paper was entitled "Breast Carcinoma: An Appraisal of Therapeutic Measures."

Dr. Zack D. Owens, class of 1930, was elected President-elect of the North Carolina State Medical Society, to take office in May, 1954. Dr. Owens practices in Elizabeth City, N. C.

Dr. J. King B. E. Seeger, Jr., class of 1937, has announced the opening of a suburban office for the practice of obstetrics at 600 West Belvedere Avenue, Baltimore.

Dr. Harold Sussman, class of 1947, has been recently on active duty on the Korean front. Dr. Sussman was head surgeon of the 7th Medical Battalion.

Dr. James J. Gerlach, class of 1946, has announced the opening of his office for the practice of Otolaryngology at 4 East Eager Street, Baltimore 2, Maryland.

Dr. Jacob H. Conn, class of '29, has been elected a Charter member and fellow of the American Academy of Child Psychiatry and appointed to the national board of Editors of the Archives of Criminal Psychodynamics. Dr. Conn recently presented a paper on the "Hypnotherapy of Chronic War Neuroses with a discussion of Abreaction, Regression and Revivication" to the Society for Experimental and Clinical Hypnosis in New York.

Dr. I. Phillips Frohman, class of 1937, recently presented a paper entitled "Starting in Practice" before the Student American Medical Association, Interns and Residents of the University of Virginia Medical School at Charlottesville, Virginia. Following the paper a round table discussion with practitioners and students took place. They considered the opportunities and problems of general practice in the urban, rural and small community levels.

Dr. Donald E. Fisher, class of 1947, has announced the opening of his office for the general practice of medicine at 1707 Edmondson Avenue, Catonsville, Maryland. Dr. Fisher has recently returned to Baltimore following a tour of duty with the United States Public Health Service.

Dr. **Allan Macht**, class of 1946, has completed his residency in general surgery at the Sinai Hospital of Baltimore and has reported for active duty with the United States Air Force.

Dr. **Nathan E. Needle**, class of 1930, was recently elected President of the Maryland Academy of Medicine and Surgery, one of the oldest medical societies in Baltimore. Other officers included Dr. Conrad Acton, Dr. L. C. Dobihal, Dr. Francis A. Ellis, and Dr. E. V. Teagarden.

Dr. **John D. Morris**, class of 1943, has announced the removal of his offices to 2 West University Parkway in Baltimore.

CORRESPONDENCE

Dr. J. M. Silverstein, class of 1925, who practices in Millburn, New Jersey writes: "I am strongly in favor of increasing the dues—all sums over \$5.00 to be given the Medical School. Disbursement of this money to be at the discretion of the Board of Trustees of the Medical School."

July 24, 1952

Dear Doctor Wagner:

I am returning in a separate folder the transcription* which you loaned to me. It is an excellent reproduction and I appreciate very much your courtesy in allowing me to have it so long.

If you are interested in hearing something which is almost perfect, ask Dr. Monte Edwards who made the special reproductions for me from tape recording. Dr. Edwards obtained three sets for me and I have delivered them into the hands of my family. You see, the event of June 5 was probably the greatest single event which has occurred in my life and I was deeply affected by it. You can not imagine the intense satisfaction it has given me to be able to convey to my children the record of that experience.

Sincerely yours,
Louis A. Buie

June 23rd, 1952.

University of Maryland Alumni Association

Dear Fellow Members:

Allow me to express my appreciation of your greeting of fifty years of service which I received on my return from the American Medical meeting in Chicago.

I regretted my inability to attend the reunion but I had made previous reservations on the programs.

Very sincerely,
C. A. Clapp
Class of 1902

* These transcriptions are available in the Medical Library, School of Medicine—Ed.

Obituaries

- Basnight, Thomas Gray**, Greenville, N. C.; class of 1904; aged 72; died, January 10, 1953.
- Bennett, Joseph Hammond**, Wadesboro, N. C.; class of 1894; aged 82; died, March 7, 1953, of uremia.
- Carman, Richard P.**, Baltimore, Md.; class of 1901; aged 85; died, February 3, 1953, of uremia.
- Doonan, Henry Edward**, South Hadley Falls, Mass.; B.M.C., class of 1908; aged 70; died, January 7, 1953, of heart disease and asthma.
- Falkner, Lewis William**, Youngstown, N. Y.; B.M.C., class of 1907; aged 70; died, November 4, 1952, of myocardial infarction.
- Greutzner, Edward Theodore**, Fairchance, Pa.; class of 1916; aged 65; died, November 7, 1952.
- Hartman, Harry Miller**, Gettysburg, Pa.; B.M.C., class of 1902; aged 79; died, January 14, 1953.
- Janney, Francis White**, Baltimore, Md.; class of 1905; aged 72; died, February 1, 1953, of heart failure.
- Mahan, Edgar Wade**, Elm Grove, W. Va.; class of 1931; aged 47; died, December 7, 1952, of a heart attack.
- McGuire, John P.**, Clarksburg, W. Va.; class of 1905; aged 79; died, April 17, 1953, of a heart attack.
- Mee, Robert Amos**, Wakefield, N. H.; class of 1928; aged 56; died, December 9, 1952, of sepsis following a laryngectomy for carcinoma.
- Riordan, Arthur Hatton**, Longmeadow, Mass.; class of 1915; aged 61; served during World War I; died, February 13, 1953, of coronary disease.
- Robertson, William W.**, Danville, Va.; P & S, class of 1890; aged 86; died, January 19, 1953.
- Rosen, Marks Julius**, North Hempstead, N. Y.; class of 1928; aged 49; died, February 23, 1953, of myocardial infarction and diabetes mellitus.
- Smith, Arthur W.**, Fairmont, W. Va.; B.M.C., class of 1899; aged 77; died, December 3, 1952, of carcinoma of the esophagus with metastases.
- Smykowski, Bronislaw L.**, Bridgeport, Conn.; B.M.C., class of 1911; aged 69; died, February 4, 1953, of cerebral hemorrhage and right hemiplegia.
- Stoneham, Hartwell Graham**, Waverly, Va.; class of 1913; served during World War I; died, January 12, 1953, of heart disease.
- Van Bibber, Armfield Franklin**, Bel Air, Md.; class of 1896; aged 80; died, January 16, 1953, of bronchopneumonia.
- White, Joseph Hill**, Washington, D. C.; P & S, class of 1883; aged 93; died, February 28, 1953, of senility.

Dr. Richard B. Norment, Jr.

Dr. Richard B. Norment, Jr., class of 1914, died at the Washington County Memorial Hospital in Hagerstown on April 8, 1953 following a heart attack. Dr. Norment had practiced in Hagerstown since 1918.

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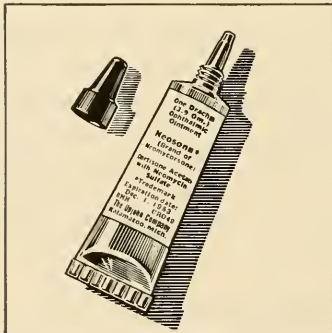
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EDITORIAL

CANCER RESEARCH, PAST, PRESENT, AND FUTURE

Before attempting to point out the direction that cancer research may be taking, it is necessary to mention briefly the three major periods in the growth of our knowledge of this disease. Knowledge and theories of the cause of cancer have been greatly influenced by developments in the fields of science and technology. Perhaps the outstanding event in the history of our knowledge of cancer was the development of the microscope which led to the elucidation of the cell theory and resulted in the appearance of embryologists, pathologists, bacteriologists, cytologists, and geneticists. The first period, therefore, is the premicroscopic period during which cancer was well known, but the theories concerning its etiology were extremely vague. About the only thing that could be said of this period is that the effects of the disease were appreciated. This was evident from the name "malignant," which comes to us from this period.

In the second period, with the development of subspecialties in microscopy, there arose several theories on the etiology of the disease, each relating the cause of cancer to some phase of their specialty. The embryologists saw cancer as uncontrolled growth tendencies of embryonic cell rests that were either misplaced or that had failed to differentiate and become mature at the proper time. Even after 100 years, this theory is not without its followers. The pathologists saw chronic irritation and/or trauma and the continuous regeneration necessary for repair as one of the factors causing cancer. This too has survived until the present day and is one of the most popular theories. The continued use of the microscope eventually led to the discovery of bacteria and other pathogenic and non-pathogenic parasites. All of these were, in their turn, incriminated as possible causes of cancer. Eventually, with the discovery of submicroscopic forms, there arose the virus theory of the etiology of cancer. Still popular, this theory has considerable evidence in its favor, but as one book on this subject stated, "The only thing that is wrong with the virus hypothesis is that it remains unproven." However, this may be said of all the theories of the cause of cancer. During this same time, the closer scrutiny of cells turned the attention of other groups towards the nucleus, chromosomes, and the genes. These observations, along with the discoveries of the functional relations of chromosomes

gave rise to another school—the geneticists. They naturally gained the impression that cancer is due to some modification of the genes in these chromosome cell regulators, or in other words, that cancer is caused by a somatic mutation.

The microscopic period has extended up into the present postmicroscopic or biochemical era—the third period. At the moment, this involves many activities that are really the continuation of the general line of thought of the second period. For example, observations are being made on viruses with the electron microscope, an instrument which is pushing the minimum limit of the study of morphology, close to the molecular level. While the actual starting point of the present biochemical-biophysical endocrine approach to cancer research cannot be definitely given, it may be said to have started about the time that Roentgen discovered x-rays, or just before. Becquerel then discovered radioactivity, and soon both x-rays and gamma rays of radioactive material were found to be carcinogenic. With the great advances in the fields of chemistry and biochemistry, investigators turned their attention to cytochemistry and enzymes. One group of cytochemists believes that cancer may involve alteration of enzyme constituents of cells. Other chemists, physiologists, or biologists, with the growth of our knowledge in the field of endocrinology, have attempted to ascertain whether endocrine substances, sex hormones, or endocrine imbalances of various kinds may not be the cause of the malignant or neoplastic transformation.

It is apparent that some of these hypotheses deal with susceptibility factors (embryonic cell rest); some deal with physico-chemical or biological environmental *agents* (x-ray, gamma ray, sex hormones, virus, polycyclic-hydrocarbons, etc.); and others have focused attention on cell structures or products (genes and/or enzymes or hormone substances) that may conceivably be one part of the mechanisms regulating differentiation and cell division. While there is probably a grain of truth in each hypothesis, they all omit or fail to express the major truth by being too specific or limited in scope. Considered individually, they do not explain the cause of cancer, but only reflect the progressive development of scientific technics and specialization. Perhaps the facts necessary to explain the etiology of cancer are already before us, and we only need a superhuman non-specialist to select the grain of truth from each hypothesis and fuse these into an elementary concept of how these factors interact to produce neoplastic growth. On the other hand, some of the key pieces of information may not have been discovered yet, but are awaiting the development of new instruments, new methods, and new subspecialties.

THE CANCER PROBLEM TODAY

It would be impossible to mention all of the lines of cancer research pursued during the last ten years and under active investigation at present. The greatly increased financial support during this period has resulted in practically all fields of medicine, biology, chemistry, and physics being invaded by so-called cancer research or vice versa. A considerable number of chemists and biochemists (1, 2) are indulging in a "needle in the haystack" search for an altered cellular enzyme. Geneticists and some non-geneticists are likewise looking for altered genes in cancer cells and are attempting to add as support to their views, the observation that certain cancer-producing

chemicals (methylcholanthrene) (3) and physical agents (x-ray, ultraviolet light) are also mutagenic.

The endocrinologists are also having their day in the cancer field, both in therapy (4, 5) and in research on etiology (6, 7). We have almost recovered from the "big scare" regarding possible cancer-producing potentialities of estrogens (8, 9). Thoughts have been turned to other substances such as normal and abnormal adrenal steroids (10). More important is the shift toward the concept that it is not the endocrine substance per se, that may induce cancer, but long continued endocrine imbalances that result from natural or artificial changes in hormone levels (7, 11). The various types of tumors induced in mice and rats by manipulation of estrogen levels (mammary, testicular, pituitary, lymphoid, and uterine) are, according to this, not caused by the estrogen directly, but the general imbalance of the total endocrine system and especially the hypophyseal adrenal gonad system (7, 11). The best evidence in favor of this hypothesis is that under certain conditions (estrogen deficiency resulting from irradiation of ovaries, transplantation of ovary to spleen, ovariectomy) administration of estrogen prevents the development of ovarian or adrenal tumors (6, 11, 12).

Thyroid tumors have also been induced in mice by hormonal imbalances resulting from long-continued application of thiouracil (11, 13). It is also thought that some of the cancers induced by irradiation (ovarian tumors in mice from irradiation of ovaries and pituitary tumors in mice from radioiodine destruction of thyroid) are not due to the irradiation per se, but related partly to the resulting hormonal imbalance (11, 14, 15).

Recently, high hopes have been held for the general idea that if the basic cause of malignancy is a maladjusted state or hormonal imbalance, then a readjustment of hormone levels to a normal or drastically different (negative or reciprocal) balance should cure the disease (4, 5). While the initial or basic cause may be hormonal imbalances or subtle maladjustment; we must not lose sight of the fact that there is also involved at some stage what is probably an irreversible change in a cell or cells: sometimes referred to as a malignant transformation. If this cell change does occur and if it is irreversible, then the drastic all-out attempts to radically change hormone balances (estrogen, testosterone, gonadectomy, adrenalectomy, hypophysectomy) after the disease has developed are, in effect, "locking the barn door after the horse has been stolen." It is true that some commendable and spectacular results have been achieved with these new methods of suppressing the manifestations of neoplastic disease by means of endocrine manipulation. These results are probably an expression of the fact that many neoplasms are not entirely beyond hormonal control (autonomous) until a very late stage of the disease. So far, most of the reports in this field describe a temporary arrest of the disease, but eventually the ability or tendency of the malignant cells to continue the process of unorganized growth asserts itself. The partial or temporary responses to hormone therapy followed by a final refractory state may possibly be related to the fact that the mechanisms for regulating hormone levels and conditions in the body are more efficient than our attempts to alter these or become so after compensating mechanisms develop. The latter explanation of the state of being refractory to the artificially controlled hormone levels is im-

probable, because it is difficult to understand how a patient could develop potent compensating mechanisms of hormonal regulation after removal of two or three of such important endocrine organs as the gonads, adrenals, hypophysis, etc.

For the past two to three years, evidence has been accumulating (16, 17) that stress of various kinds has an influence on the rate of cancer induction in mice. The factors involved are being intensively investigated at present, and stress appears to have an influence by virtue of its tendency to produce functional alterations (imbalances) in neuro-endocrine intercommunication systems. If one of the basic causes of the malignant transformation of cells is a chronic or long-continued type of hormonal maladjustment or imbalance, it would appear that our greatest hope for solving the cancer problem in the future would lie in the development of methods for detecting and correcting maladjusted states of hormonal imbalance. It is thus possible that many forms of cancer and some of the other non-infectious related diseases or diseases of imbalance states (diabetes, arteriosclerosis, obesity) could thus be prevented. If this goal could be achieved, perhaps we could abandon our present slogan expressed so often and in so many ways: "Detect cancer early to treat it successfully."

The plan of attack generated by this slogan is possibly the best one for combating this disease at the present level of our knowledge and gave rise to the detection center, an idea which is now growing cold. It is apparent that this plan is a defensive or delaying action, and it must be admitted that detection centers are and probably always will be:

1. Inadequate to cover most of the people that should be examined. (More and more elaborate detection procedures cannot be applied to more than a small percentage of people, even if most doctors' offices became detection centers. Present detection centers have, in some instances, yielded good research material, but have not made a dent in the problem.)
2. Imperfect in that many cancers cannot be detected in time. (Even if all people could be examined routinely and semi-annually, not all tumors would be discovered early or at least early enough to yield 100% cures.)
3. Ineffective in that therapy of some types of tumors is unsuccessful in most cases, even if applied early. (Present methods of detection and therapy yield a very low per cent salvage of the leukemia and stomach tumor patients. Unfortunately, these constitute a large portion of the total tumors.)

Eventually then, and perhaps even now, our slogan should be: "Find the precursor causative hormonal imbalances or states of maladjustment, correct them, and prevent the development of cancer." When will this be possible? This is like asking a prospector when he will discover gold! Many investigators feel that with continued support from all sides (the public, administrators, and foundations) and with intensive research along the lines mentioned above, that a way will soon (10-15 years) be found to discover conditions or physiological states that lead to and precede cancer by many years (5-10 years), long before irreversible stages have appeared. Then, the development of methods to establish normal or ideal states or balances in the neuro-hormonal intercommunication control systems may ultimately lead to prophylactic control of cancer.

Frank H. J. Figge, Ph.D.

REFERENCES

1. POTTER, V. R.: Studies on the reaction of the Krebs citric acid cycle in tumor, with homogenates, slices, and in vivo technics. *Can. Res.*, **11**: 565-570, 1951.
2. GREENSTEIN, J. P.: *BIOCHEMISTRY OF CANCER*. Academic Press, New York, 1947.
3. STRONG, L. C.: The induction of mutations by a carcinogen. *Brit. J. Can.*, **3**: 97-108, 1949.
4. HUGGINS, C.: Prostatic cancer treated by orchiectomy: five year results. *J.A.M.A.*, **131**: 576-581, 1946.
5. HUGGINS, C. AND D. M. BERGENSTAL: Inhibition of human mammary and prostatic cancers by adrenalectomy. *Can. Res.*, **12**: 134-141, 1952.
6. GARDNER, W. U.: Hormonal imbalances in tumorigenesis. *Can. Res.*, **8**: 397-411, 1948.
7. GARDNER, W. U.: Hormonal aspects of experimental tumorigenesis. *ADVANCES IN CANCER RESEARCH I*, pp. 173-232, Academic Press, N. Y., 1953.
8. ALLEN, E. AND W. U. GARDNER: Cancer of cervix of uterus in hybrid mice following long-continued administration of estrogen. *Can. Res.*, **1**: 359, 1941.
9. GARDNER, W. U. AND S. C. PAN: Uterine and cervical tumors in untreated and hormone-treated mice. *Can. Res.*, **9**: 549, 1949.
10. DOBRINER, K., LIEBERMAN, S., WILSON, H. AND RHOADS, C. P.: Adrenal function in patients with neoplastic disease. *Can. Res.*, **10**: 213, 1950.
11. FURTH, J.: Conditioned and autonomous neoplasms: A review. *Can. Res.*, **13**: 7, 1953.
12. KAPLAN, H. S.: Influence of ovarian function on incidence of radiation-induced ovarian tumors in mice. *J. Nat. Can. Inst.*, **11**: 125-132, 1950.
13. MORRIS, H. P., DALTON, A. J. AND GREEN, C. D.: Malignant thyroid tumors occurring from the mouse after prolonged hormonal imbalance during the ingestion of thiouracil. *J. Clin. Endocrinol.*, **11**: 1281-95, 1951.
14. GORBMAN, A.: Factors influencing development of hypophyseal tumors in mice after treatment with radioactive iodine. *Can. Res.*, **80**: 538-540, 1952.
15. GORBMAN, A. AND EDELMANN, A.: Role of ionizing radiation in eliciting tumors of pituitary gland in mice. *Proc. Soc. Exp. Biol. & Med.*, **81**: 348-50, 1952.
16. FIGGE, F. H. J. AND WOLFE, G. F.: Unpublished data.
17. WOLFE, G. F. AND FIGGE, F. H. J.: Influence of hormonal imbalances resulting from gonadectomy, parabiosis, seasonal variation, and stressors on latent period of methylcholanthrene-induced tumors in mice. *Proc. Am. Asso. Can. Res.*, **1**: 61-62, 1953.

ERROR

In the July, 1953 number of the *Bulletin* (Vol. 38, #3) the legends beneath the color plate opposite page 124 were incorrectly given. The lower right hand plate is Figure 1, the upper right hand is Figure 2, the upper left hand is Figure 4 and the lower left hand is Figure 3. The following is the corrected legend.

Plate I

FIG. 1 Lymph node in femoral triangle of dog. Photographed in artificial light (lower right).

FIG. 2 Same as Fig. 1. Note red fluorescent lymph node. Fluorescence photography-dark room, ultraviolet light (upper right).

FIG. 3 Mesenteric lymph node of dog. Photographed in artificial light (lower left).

FIG. 4 Same as Fig. 3. Note red fluorescent lymph node. Fluorescence photography-dark room, ultraviolet light (upper left).

EFFECTS OF ACUTE DECOMPRESSION STRESS UPON PLASMA POTASSIUM AND HEMATOCRIT IN THE RAT*†

KARL E. SUSSMAN, B.A., ALFRED J. PRATT, B.S., DIETRICH C. SMITH, PH.D.,
AND FREDERICK P. FERGUSON, PH.D.

Experiments recently reported from this laboratory have demonstrated that acute decompression stress of a moderate degree produces a marked fall in plasma potassium concentration and an increased hematocrit value in the cat (1) and in the dog (2). In both species, the fall in potassium is replaced by a rise when decompression is increased sufficiently to produce respiratory collapse (1, 3). The chief physiologic effects of acute decompression stress seem to result from the hypoxia produced, rather than from the lowered barometric pressure.

In view of these results it seemed of interest to determine whether moderate decompression would produce a similar fall in plasma potassium concentration and a rise in the hematocrit in the rat.

METHODS

Long-Evans male rats, weighing from 180 to 310 gms. with a mean weight of 210 gms., were used in these experiments. They were fed a diet of Purina Chow and water *ad libitum*. No anesthesia was used at any time.

Acute decompression stress was produced by placing the rats in a decompression chamber, which was then evacuated to a simulated altitude of 25,000 ft. (282 mm. Hg) or 30,000 ft. (225.6 mm. Hg). Once at the desired altitude, ventilation of the chamber was so arranged that approximately 12 liters of air flowed through each minute. At the end of 30 minutes a valve was opened and the chamber returned to atmospheric pressure within 10 to 15 seconds.

To determine whether the noise of the motors, the vibration of the apparatus and the confinement in the chamber acted as stress stimuli, some rats were placed in the chamber for 30 minutes with the decompression pumps operating but with the valves so adjusted that air pressure did not fall.

On removal from the chamber, whether decompressed or not, the rat was immediately decapitated and blood was collected from the cut ends of the carotid arteries. Care was taken to collect only the blood flowing freely from the arteries. In this way contamination by tissue fluids, which would tend to raise the potassium value, was minimized. Samples collected in this fashion had potassium levels which were within the expected range. Those made of blood oozing from the stump after blood pressure had fallen showed appreciably higher potassium values, indicating mixture with tissue fluids.

On removal from the chamber the rat was conscious, seemingly alert and showed no sign of distress.

Blood samples were centrifuged immediately at a relative centrifugal force of 1170 g's. Data obtained from samples showing visible evidence of hemolysis were not

* From the Department of Physiology, School of Medicine, University of Maryland, Baltimore.

† Read before the Alpha Omega Alpha Research Symposium, Gordon Wilson Hall, March 11, 1953.

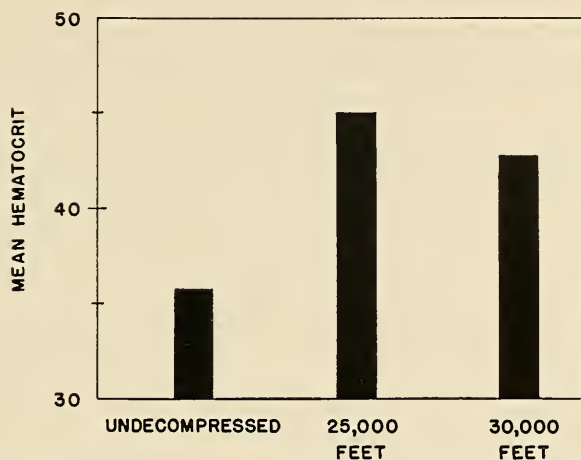


FIG. 1. The effect of decompression for 30 minutes to altitudes of 25,000 and 30,000 ft. on the plasma potassium of the rat. The undecompressed rats were placed in the decompression chamber with evacuation pumps running but with valve open, so that pressure remained at atmospheric level. Control values were obtained from rats taken directly from cages without prior handling.

● values for individual animals; — mean values.

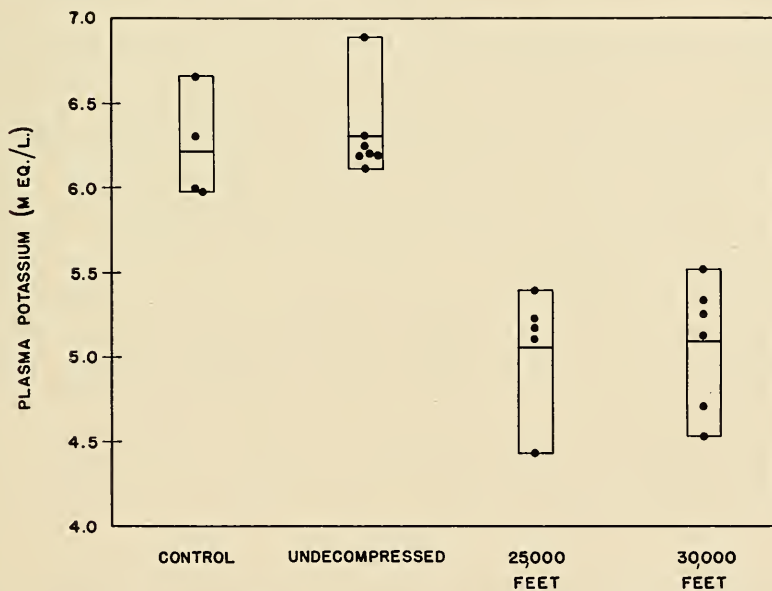


FIG. 2. The effect of decompression for 30 minutes at altitudes of 25,000 and 30,000 ft. on the hematocrit of the rat. Undecompressed rats treated as in Figure 1.

included in the results. Plasma potassium was determined with a flame photometer (Perkin-Elmer Model 52-C), using the internal standard method.

The value of the plasma potassium in resting, undisturbed rats was determined by removing the animals from their cages and decapitating them as quickly as possible. Blood was collected in the same manner as it was from the animals placed

in the chamber. The plasma potassium level so determined served as a control for values obtained from rats placed in the chamber, whether decompressed or not.

RESULTS

Plasma Potassium. The effect of acute decompression on the plasma potassium of the rat is shown in Figure 1. While the mean plasma potassium level in the 4 control animals was 6.23 mEq./l., it was 6.31 mEq./l. in the 7 undecompressed animals, 5.07 mEq./l. in the 5 rats decompressed to 25,000 ft., and 5.08 mEq./l. in the 6 rats decompressed to 30,000 ft. The difference between the plasma potassium of the decompressed and the undecompressed series was found to be significant to the 1 per cent level, using Fisher's *t* analysis for a small sample. Analysis of the data shows that in every single instance the plasma potassium of the decompressed rats was lower than that of any of the control or undecompressed animals.

Hematocrit. Figure 2 shows that the hematocrit of the decompressed rats increased markedly over the hematocrit of those animals not subjected to decompression. There does not appear to be any significant difference between the hematocrits of those rats taken to 25,000 ft. as compared to those taken to 30,000 ft.

DISCUSSION

The fall in plasma potassium observed in unanesthetized acutely decompressed rats closely resembles that seen in the cat (1) and the dog (2) under similar circumstances. Kline (1) reported that in the acutely nephrectomized and anesthetized cat the plasma potassium still fell on moderate decompression. Ferguson and Smith (2) point out that while acute decompression increases the loss of potassium through the kidneys in the unanesthetized dog, this route cannot account for all of the potassium which disappears from the extracellular space. Further experiments are planned with the rat to determine to what extent the kidneys participate in the plasma potassium shift just described.

Variable results in plasma potassium concentration following different types of stress have been reported by others. Miller and Darrow (4) noted a rise in the serum potassium of rats after forced swimming (some to the point of exhaustion). Rats injected with desoxycorticosterone showed a fall in serum potassium after exercise. Booker et al. (5) observed a rise in the plasma potassium of mice after cold stress. However, Kuhl, Wilson and Ralli (6), failed to observe any changes in either plasma potassium or sodium in man after immersion in water at 9.5° C. for 8 minutes. The stress of this magnitude did produce a 40 per cent fall in eosinophils 2 hours later.

Dury (7) has observed a lowering of plasma potassium with no change in plasma sodium within 60 minutes after the injection of adrenalin into normal rats as well as into adrenalectomized, adrenal enucleated and hypophysectomized rats. Since it is generally accepted that hypoxia is a powerful stimulus for the release of adrenalin, it is possible that the fall in plasma potassium seen in the rat after decompression may be caused by this hormone. There is also reason to believe that the antidiuretic hormone may be involved. Experiments are now under way to clarify these points. However, Kline (1), favors the view that, in the cat, the release of adrenal cortical

hormones is responsible for the decrease in plasma potassium after moderate decompression. He feels that adrenalin is responsible for the rise observed in cats on severe decompression to the point of respiratory collapse.

The rise in hematocrit observed in acutely decompressed rats is similar to that reported by others in the cat (1, 8) and the dog (2). Smith and Brown (8) ascribe the rise in hematocrit seen in the cat to contraction of the spleen since it does not occur after splenectomy.

SUMMARY

Rats decompressed to a simulated altitude of either 25,000 feet or 30,000 feet show after 30 minutes a fall in plasma potassium concentration and a rise in the hematocrit values.

ACKNOWLEDGMENTS

We wish to express our grateful appreciation to Miss Carolyn F. Hendrickson and Mrs. Jeanne Q. Barry for their assistance in procuring the data used in this paper. This work was supported in part by a grant from the Frank C. Bressler Reserve Fund.

BIBLIOGRAPHY

1. KLINE, RAYMOND F.: Role of adrenal glands in the plasma and urinary electrolyte changes during moderate and severe hypoxia, *Fed. Proc.* **11**: 84, 1952.
2. FERGUSON, F. P. AND SMITH, D. C.: Effects of acute decompression stress upon plasma electrolytes and renal function in dogs, *Amer. J. Physiol.* **173**: 503, 1953.
3. FERGUSON, F. P. AND SMITH, D. C.: Unpublished observation.
4. MILLER, H. C. AND DARROW, D. C.: Relation of serum and muscle electrolytes, particularly potassium, to voluntary exercise, *Amer. J. Physiol.* **132**: 801, 1941.
5. BOOKER, W. M., HAYES, R. L., DA COSTA, F. C., JONES, W., HILL, R. AND TITUS, P.: Analysis of the electrolyte changes in rats during cold stress, *Fed. Proc.* **11**: 15, 1952.
6. KUHL, W. J., WILSON, H. AND RALLI, E. P.: Measurements of adrenal cortical activity in young men subjected to acute stress, *J. Clin. Endocrin. Met.* **12**: 393, 1952.
7. DURY, ABRAHAM: The effect of epinephrine and insulin on the plasma potassium level, *Endocrin.* **49**: 663, 1951.
8. SMITH, DIETRICH C. AND BROWN, FRANCES C.: Effects of acute decompression stress upon some blood components, especially leucocytes, in intact and splenectomized cats, *Amer. J. Physiol.* **164**: 752, 1951.

MEIGS' SYNDROME: APPARENT CARDIAC MANIFESTATIONS

JOSEPH MILLETT, M.D.* AND CARL A. HETTESHEIMER, M.D., F.A.C.S.†

HEMPSTEAD, L. I., N. Y.

Meigs' syndrome is an eponymic name attached to a disease complex which consists of an ovarian fibroma in association with ascites and hydrothorax. While this combination of pathologic conditions has been known and commented upon in several instances between 1879 and 1934 (1), it was not until the classical report of Meigs' and Cass in 1937 (2) that the syndrome was established as a distinct clinical entity with a predictable course of events, differential diagnosis and treatment.

Since 1937 hardly a year has passed without the addition of further case reports in the literature, particularly in the specialized fields of obstetrics, gynecology and surgery (3). Very few reports have appeared in periodicals dealing with subjects on internal or general medicine (4).

Inasmuch as cardiac diagnoses have been entertained in a number of these cases because of the combination of pleural effusion and ascites, and rarely the association of peripheral edema, this syndrome deserves further recognition in the literature of internal medicine. On carefully reviewing the published cases, one is struck by the fact that invariably these patients are seen first in medical clinics, or by medical specialists, and are treated for those medical conditions which ordinarily give rise to pleural and abdominal fluid. As treatment progresses to no avail, and with the discovery of an abdominal tumor, the case is turned over to the surgeons, who in turn debate whether to operate upon what is apparently a malignancy in the abdomen with metastasis to the pleura.

Glass and Goldsmith (5) report a 73 year old female that had fluid in the chest and abdomen and marked peripheral edema to both knees. The diagnosis of hypertensive cardio-vascular disease was made. Following the discovery of the ovarian tumor, they stated as follows:

"Despite suggestive signs and symptoms of cardiac disease and EKG evidence of myocardial fibrosis, this patient has been cured by removal of the ovarian tumor. Post-operatively, the dyspnoea, cyanosis, edema and fluid in chest and abdomen entirely disappeared and have not recurred although she is actively engaged in housework and takes no medication."

Bomze and Kirshbaum also reported (3A) a 45 year old female who had edema of the feet and ankles, heart consciousness, palpation, and dyspnoea, in addition to fluid in the chest and peritoneal cavities. The EKG revealed evidence of extensive myocardial damage on a probable arteriosclerotic basis. She was hospitalized as a case of cardiac failure and was cured following the removal of an ovarian fibroma.

Herrick (4A) described the case of a 75 year old female who had considerable edema of the extremities, in addition to fluid in the chest and abdominal cavities.

Read before the Medical Journal Club, Hempstead, N. Y., November 11, 1949.

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An EKG revealed a moderate degree of myocardial fibrosis. Repeated chest taps only resulted in the re-accumulation of the fluid. Following the removal of an ovarian fibroma she was entirely cured.

While the above cases illustrate that Meigs' syndrome can frequently simulate late congestive failure and be cured by the removal of the tumor, it should be borne in mind, although it has not yet been reported, that these conditions may co-exist.

It is not our purpose to present another cut and dried case of Meigs' syndrome, but to point out and emphasize the pitfalls in the diagnosis of this relatively rare, curable and fascinating condition, with some emphasis on the apparent cardiac manifestations. We wish to stress that this 62 year old patient lived for 9 years following surgery after having been noted as *being moribund* six days after her original admission to the Meadowbrook Hospital in 1937. Her death, 9 years later at the age of 71, was entirely unrelated to the condition for which she was surgically treated. This case is reported in some detail as it illustrates the long drawn out period of waiting by both the medical and surgical division of the hospital because of the lack of knowledge of the syndrome at that time. She was first seen on April 16, 1937 and did not receive surgery until June 28, 1937.

If this syndrome is recognized, a patient may be spared many unnecessary and complicated investigations.

CASE REPORT

This patient was admitted to the Meadowbrook Hospital on May 13, 1937, through the Tumor Clinic of the Out Patient Department. The following is a resumé of her course in the Tumor Clinic:

She had been referred by her local physician to the Tumor Clinic on April 16, 1937, with the chief complaint of swelling of the abdomen and edema of the legs. The patient has been well until 5 weeks ago. At this time she developed an upper respiratory infection. Following this the patient noticed that her legs began to swell. She was seen by her local physician who told her that she had a tumor of the abdomen and referred her to the Clinic.

The patient was not married. She had had no serious illnesses until the present time. Her last menstrual period occurred at the age of 45 years. She has had no bleeding since. There has been little or no menopausal symptoms. The patient felt that she had lost considerable weight in the last 4 weeks.

Physical Examination

The patient is a 62 year old white female, somewhat emaciated but not acutely ill.

Head: The eyes show evidence of arcus senilis. The pupils react to light and accommodation. The mouth and throat are negative.

Neck: There are no palpable nodes in the back or supraclavicular space.

Heart: Examination of the heart shows the apex in the fifth interspace just outside the midclavicular line. Heart sounds are of fair quality. No definite murmurs are elicited. The blood pressure is 100 systolic over 70 diastolic.

Chest: There is a large amount of fluid in the right chest.

Abdomen: The abdomen is markedly distended uniformly. Palpation shows a tumor mass apparently arising in the pelvis extending to about 4 cm. below the umbilicus. The mass is nodular, very firm and somewhat fixed. There is a fluid wave.

Rectum: Rectal Examination: The cervix is negative. There is resistance encountered in both fornices.

Extremities: The legs are edematous, evidently caused by pressure of the tumor.

Diagnosis

Ovarian neoplasm with metastasis to the right lung.

Recommendation: Roentgen studies of chest and abdomen.

Disposition: The patient is to be presented at Conference on Friday, April 23, 1937.

On April 23, 1937 the patient was presented at the Tumor Conference. The Roentgenologist reported a large amount of fluid in the right chest. The flat film of the abdomen showed a tumor mass in the pelvis extending up above the level of the crest of the ileum, with a few small calcium deposits in the medial line.

It was the consensus of the surgeons present that this patient had an ovarian malignancy with metastasis to the right chest. However, one opinion, in the light of subsequent events must, of necessity, be quoted. Dr. Fred Stewart, (Consultant to the Clinic from Memorial Hospital, New York City) stated as follows:

"With a tumor this large, with edema of the legs, evidence of calcification of the tumor, and fluid in the chest, I would think first of a bulky, very large ovarian fibroma rather than an ovarian malignancy. You can find fluid in the chest leading up through the diaphragm in a large ovarian fibroma. Calcification would point in this direction rather than in a malignant ovarian tumor. The shadow is too well outlined for an ovarian tumor which produces metastasis. I would use surgery rather than start roentgen therapy."

The patient was placed on the waiting list and admitted to the Hospital on May 13, 1937.

A. W. is a 62 year old white unmarried female, admitted May 13, 1937 and discharged on July 28, 1937. The history is as noted in the Tumor Clinic. In the time between her admission to the hospital and the examination at the Tumor Clinic the edema of the feet and the dyspnea had cleared up entirely on bed rest, but had apparently returned upon being up and about.

The family and past history was essentially negative. There had been no surgery or serious illnesses.

The system review was essentially negative except for those pointing apparently to the cardiovascular system, i.e., orthopnoea, dyspnea, and peripheral edema of the lower extremities. The menstrual history was also essentially negative. She had begun to menstruate at the age of 16, and there was no dysmenorrhea or other abnormalities. The last menstrual period was at 45 years of age.

The pertinent physical findings at this time were marked emaciation, a large amount of fluid in the right chest, and a uniformly distended abdomen. Palpation of the abdomen was difficult. There was a definite fluid wave and shifting dullness. The extremities revealed a 4 plus edema up to the knees.

Course in Hospital

(The following is a digest of the progress notes.)

5-14-37—An abdominal paracentesis was done (J. M.) and 4,000 cc. of straw colored fluid was obtained. The dyspnea was relieved moderately.

5-17-37—A right thoracic paracentesis was done, and 6,000 cc. of straw colored fluid was obtained.

5-18-37—Cardiac consultation for opinion as to surgical risk: The patient is quite dyspneic and orthopneic. The neck veins are distended. The L.O.P. is just outside the midclavicular line. There is a systolic retraction at the apex. No thrill is felt over the precordium. A_2 is greater than P_2 . There is a regular sinus rhythm. There is fluid in the right chest. There are moist rales in the left base. The liver and spleen are not felt because of the ascites. There is moderate sacral and chest wall edema and slight pretibial edema. The EKG shows abnormal "T" wave in all the standard and precordial leads.

Diagnosis: A—A. S.

B—C. S., M. F., adhesive pericarditis (?)

C—R. S. R., Congestive Failure

D—III

Chronic adhesive pericarditis is to be ruled out. The patient seems to be in congestive failure and is a poor risk at present. Would advise digitalization, ammonium chloride, mercupurin, and limited fluids.

- 5-19-37—The patient's condition is very poor, and she *seems almost moribund*.
- 5-29-37—Following an abdominal paracentesis, after 4,500 cc. of straw colored fluid was removed, a very definite smooth hard mass can be felt in both lower quadrants.
- 5-30-37—There has been a good response from the cardiac regime. An excellent diuresis has been obtained by the use of mercupurin. The patient is not as dyspneic and seems to be losing weight from the diuresis.
- 6-9-37—Cardiac Consultation: The cardiac findings are not now materially different from those on 5-18-37. There is still fluid in the right chest and rales in the left base. The peripheral edema has subsided. There is doubt as to the ascites being of cardiac origin. (Dr. L. H. Bauer)
- 6-12-37—One thousand seventy-five hundred cc. of straw colored fluid obtained from abdominal paracentesis.
- 6-20-37—The patient's general condition is moderately improved.
- 6-24-37—The pelvic mass extends about 4 inches above the pubis. It is firm and ballotable. The patient is comfortable.

Laboratory Work: The complete blood count reveals a moderate anemia and a normal white count. The Wassermann and Kahn are negative. The blood chemistry is negative. The sputum is negative. The urine is negative.

Chest Fluid, 5-17-37: Sections show a sanguineous exudate with scattered clumps of endothelial cells. No tumor cells are seen. There is no histologic evidence of malignancy.

Abdominal Fluid, 6-12-37: There is no histologic evidence of malignancy.

On June 28, 1937 the patient was prepared for surgery (C. A. H.). The peritoneum was incised and free yellow serous transudate gushed from the wound. About 2 gallons of fluid was suctioned off. An ovarian tumor was removed.

Pathological Report: Gross Diagnosis: The specimen is a large nodular pear shaped mass, 17 x 17 x 12 cm. The surface is yellow-white and finely ragged. The tumor is firm and heavy, and on section shows dense whorls of fibrous tissue interspersed with fat.

Microscopic Diagnosis: Ovarian fibroma with hyaline degeneration.

A roentgenograph taken on July 11, 1937 revealed fluid in the right chest to the third rib. The patient was discharged on July 28, 1937 after recovering from what appeared to be a mild case of broncho-pneumonia.

This same patient, now a 70 year old, white, unmarried female was readmitted to the Meadowbrook Hospital on February 4, 1945. Her chief complaint was increasing dyspnea for the past 2 weeks. Further questioning revealed that she had been orthopneic and had exertional dyspnea for the past several years. There had been no ankle edema. The patient had been getting progressively weaker the past few months, with activity limited by dyspnea. She had been taking 15 drops of medicine a day at home, which was possibly digitalis.

There had been no hospitalization between the time she was discharged from the Meadowbrook Hospital in July, 1937 until the present time, 8 years later.

The physical examination revealed a small, thin, elderly female in no acute distress. While she appeared chronically ill, she was alert and cooperative. She was mildly orthopneic but not dyspneic. The neck veins were not dilated. There were a few coarse rales over both bases posteriorly. The blood pressure was 180 systolic over 80 diastolic. The apex was down and outside the midclavicular line. The rhythm was regular. No murmurs were heard. The liver was not enlarged. There was no peripheral edema of the extremities.

Laboratory Work: The Wassermann and Kahn, complete blood count, blood chemistry and sedimentation rate are negative. Roentgenographs of the chest made 2-15-45 shows a fairly marked enlargement of the heart in the region of the left ventricle. The aorta is tortuous. There is calcium scattered through the wall of the main bronchi. Throughout the lungs there is haziness and fine mottling as a result of congestion and edema.

An electrocardiograph was made 2-6-45. In the standard and precordial leads, this revealed an R. S. R., prolonged P. R. interval, incomplete A. V. conduction time, and evidence of myocardial damage.

This patient was discharged in good condition on March 2, 1945.

Thirteen months later, on April 26, 1946 she was admitted in acute left ventricular failure with many rales at both bases, but no peripheral edema. A roentgenograph of the chest showed congestive mottling in both bases of the lung fields. The cardiac shadow revealed marked diffuse enlargement. On the second day the temperature rose to 103 F, and in spite of chemotherapy, she expired on May 5, 1946 as a result of pneumonia at the right base and congestive failure.

COMMENT

Meigs' syndrome can be regarded by definition as a simultaneous collection of abdominal and chest fluid resulting from a *benign tumor of the pelvic organs*.

The etiologic factor is usually a benign fibroma of the ovary; but it can also be a granulosa cell tumor, a cystadenoma, thecoma, or Brenner's tumor. Grossly, these ovarian tumors producing the fluid may vary in size from 6 cm. to 30 cm. Microscopically they are seen to derive from the various connective tissue elements of the ovary. In these cases *no malignant cells are ever seen*. Benign fibromyomata of the uterus is rarely a cause.

The frequency of true Meigs' syndrome is exceedingly rare. Dockerty and Masson (3C) found 3 cases in a series of 283 ovarian fibromas, while Rubin, Novak and Squire (3F) reported a series of 78 cases of fibromas, fibromyomas and theca cell tumors and found only 2 cases of Meigs' syndrome; Calmenson, Dockerty, and Bianco (6) found 9 cases of Meigs' syndrome in approximately 20,000 cases of surgically removed pelvic tumors of all types. The incidence of occurrence of this syndrome in this total series was .05 per cent. Approximately 90 scattered case reports are now in the literature reporting individual isolated cases. Our own case is the only Meigs' syndrome in the Meadowbrook Hospital noted in 15 years of an active tumor and surgical service.

The origin of the abdominal and thoracic fluid in association with these smooth shelled tumor masses has never been satisfactorily explained. Dockerty and Rubin in their individual series of cases have stated that they found edema of the tumor and the pedicle in a significant number of cases, and considered the tumor as the source of the fluid. Meigs, in his original article, was at first inclined to the "alarm reaction," or repeated peritoneal trauma, as the cause of the ascites. However, to date, the cause still remains to be solved. As the fluid disappears from the body cavities on removal of the tumors, one must agree that there is cause and effect in this connection.

It has been proved that the flow of the fluid is from the peritoneal cavity to the pleural cavity. Meigs injected India ink into the ascitic fluid in two cases and found it in the pleural fluid. A reverse experiment showed that no ink flowed into the ascitic fluid when injected into the pleural cavity. In addition, it has been found that the abdominal and chest fluids are identical as to total protein content and the electrophoretic distribution of the protein components; albumin, alpha, beta, and gamma globulins and fibrinogen. Injections of air into the pleural cavities of some patients, and in the peritoneal cavities of others, followed by tilting the patients in various positions and follow-up roentgenograms seems to have ruled out pleuro-peritoneal openings in the diaphragm. At present it is felt that the fluid finds its way to the chest by means of the lymphatic system.

The presenting symptoms are referable to the abdomen, the chest or both. Abdominal complaints are usually those of enlargement, which may be gradual or sudden. Heavy sensations in the pelvis, bearing down pains or backaches, and bladder disturbances may be experienced. Elevation of the diaphragm may occasion difficulty in breathing. Chest pain is rarely encountered. Usually, there is complaint of "heaviness" in the chest and dyspnea and orthopnea, gradually increasing, either at rest or on moderate exertion. When peripheral edema of the lower extremities is noted it can usually be accounted for as a pressure phenomenon by the tumor on the pelvic blood vessels. Gastro-intestinal symptoms are usually that of vague appetite disturbances, with occasional bloating and belching. Constipation is the rule, diarrhea is never seen. The menstrual cycle is apparently not disturbed, although variations in the cycle are seen but bear no relationship to the ovarian tumor.

The diagnosis of Meigs' syndrome is dependent upon the findings of chest fluid and the presence of an abdominal tumor in association with ascites. The amounts of fluid in each cavity varies. In some cases abdominal paracentesis will have to be resorted to before a small or moderately sized tumor can be felt by bimanual examination. Occasionally a large tumor mass in the pelvis is easily palpated and a moderate amount of fluid will be found in the pleural cavity. Frequently, the main complaint is dyspnea. An abdominal tumor will be missed because attention is drawn to the pleural effusion. Pelvic examination will not be done because of the absence of abdominal complaints. The diagnosis of this syndrome should be borne in mind where a patient has had repeated abdominal and thoracic paracentesis with the rapid re-accumulation of histologically benign serous fluids. A high index of suspicion of Meigs' syndrome should lead to a pelvic examination.

In the differential diagnosis all the diseases which will produce abdominal fluid and pleural effusion should be considered. Advanced congestive failure must be ruled out. Cirrhosis of the liver and tuberculosis must be considered and excluded by physical examination and proper laboratory tests. *The diagnosis of malignant pelvic tumor with metastasis to the pleural cavity is the most frequent pitfall in these cases.* In addition, portal vein obstruction of the inferior venacava above the hepatic veins by a mediastinal new growth, severe anemias, nephritis, Hodgkins disease, etc., may be some of the lesser causes of polyserositis. The fluid in both body cavities should be examined for tumor cells.

Laboratory tests in the diagnosis of Meigs' syndrome will not be of any aid except to exclude other conditions. A complete physical examination is all important.

The prognosis of Meigs' syndrome is excellent if the ovarian tumor is removed. With the removal of the tumor, the patient ceases to form abdominal fluid, the pleural cavity clears, and recurrence does not take place. The general health, weight and entire clinical course improves. This has happened in spite of the fact that in several of the reported cases the patients were over 70 years of age and in an apparently cachectic state.

Meigs' syndrome is a definite clinical entity. It is a benign disease which is easily and permanently cured by simple laparotomy and removal of the offending tumor, regardless of the age and clinical condition of the patient. The syndrome is fatal only when misdiagnosed.

SUMMARY

1. A case of Meigs' syndrome at the age of 62 years is reported. The patient survived for 9 years after the operation.

2. The possibility of heart disease as an etiologic factor was entertained in this case because of the marked peripheral and sacral edema along with the ascites and pleural effusion. This diagnosis has been noted in other case reports with similar delays of surgical intervention.

3. Thoracentesis, abdominal paracentesis, digitalization, ammonium chloride, and mercurial diuretics were of no avail except for mild relief of a temporary nature. Recovery was complete only upon removal of the tumor.

4. Both internists and surgeons should be made more aware of this condition as the outcome of the undiagnosed case is fatal. When properly treated there is 100 per cent recovery, regardless of the patient's age or apparently critical condition.

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BIBLIOGRAPHY

1. A. CULLINGWORTH, C. J.: Fibromas of both ovaries. Tr. Obst. Soc. Lond., **21**: 275-286, 1892.
- B. TAIT, LAWSON: On the occurrence of pleural effusion in association with disease of the abdomen. Med. Chir., Tr. London, **75**: 109-118, 1892.
- C. CARO, E.: Disc. Leipzig, 1914.
- D. OWEN, A. W.: Fibroma of the ovary with account of a case. Lancet, Lond., **1**: 1211-1212, 1923.
- E. HOON, M. R.: Fibromata of the ovary. Surg., Gyn., Obst., **36**: 247-251, 1923.
- F. LEO, C.: Processo essudative pleuro-peritoneale ribelle guarito in seguito a laparatomoid per tumore ovarico. La Med. Prat., **11**: 422-426, 1926.
- G. WONG, A. I. H.: Ascites and hydrothorax associated with multilocular ovarian cyst. China M. J., **42**: 625-645, 1928.
2. MEIGS, J. V., AND CASS, J. W.: Fibroma of the ovary with ascites and hydrothorax. A Report of seven cases. Am. J. Obst., **33**: 249-266, 1937.
3. A. BOMZE, E. J., AND KIRSCHBAUM, J. D.: Fibroma of ovary with ascites and hydrothorax. Report of two cases. Am. J. Obst., **40**: 281-285, 1950.
- B. DOCKERTY, M. B., AND MASSON, M. C.: Ovarian fibromas. Clinical and pathologic study of 283 cases. Am. J. Obst., **47**: 741-752, 1944.
- C. HARRIS, F. I., AND MEYER, M. A.: Pleural effusion associated with ovarian fibroma (Meigs' syndrome). Surgery, **9**: 87-92, 1941.
- D. KELEMAN, EDWARD: Meigs' syndrome. Am. J. Obst., **47**: 275, 1944.
- E. RUBIN, I. D., NOVAK, J., AND SQUIRE, J. J.: Ovarian fibromas and theca cell tumors. Report of 78 cases with special reference to production of ascites and hydrothorax (Meigs' syndrome). Am. J. Obst., **48**: 601-616, 1944.
- F. LOCK, F. R., AND COLLINS, C. G.: Meigs' syndrome. Fibroma of ovary with ascites and hydrothorax. Am. J. Obst. and Gyn., **41**: 517, 1941.
- G. MCFEE, W. F.: Benign tumors of ovary associated with ascites and pleural effusion. Report of case of multilocular cystadenoma. Ann. Surg., **112**: 549-555, 1941.
- H. MEIGS, J. V.: Fibroma of ovary with ascites and hydrothorax, further report. Ann. Surg., **110**: 731, 1939.
- I. MEIGS, J. V., ARMSTRONG, S. H., AND HAMILTON, H. H.: Further contribution to syndrome of fibroma of the ovary with fluid in abdomen and chest (Meigs' syndrome). Am. J. Obst. and Gyn., **46**: 19, 1943.
- J. VOGT, C. J.: Granulosa cell tumor of ovary with hemoperitoneum and hemothorax; Report of case. Am. J. Obst., and Gyn., **61**: 517, 1941.

4. A. HERRICK, W. W., TYSON, T. L., AND WATSON, B. P.: Association of hydrothorax with ovarian fibroma (Meigs' syndrome). *Arch. Int. Med.*, **71**: 370-376, 1943.
- B. MILLETT, JOSEPH, AND SHELL, JOHN: Meigs' syndrome in a case of multilocular pseudomucinous cystadenoma of the ovary. *Am. J. of Med. Scien.*, **209**: 327-335, 1945.
- C. THOMPSON, R. B.: Meigs' syndrome. *British M. J.*, **1**: 668, May 29, 1943.
- D. RHOADES, J. E., AND TERRELL, A. W.: Ovarian fibroma with ascites and hydrothorax (Meigs' syndrome). *J.A.M.A.*, **109**: 1684-1687, 1937.
- E. WELD, S. B.: Fibroma of ovary with ascites and pleural effusion. *N. E. J. Med.*, **218**: 262-265, Feb. 10, 1938.
- F. PERLMUTTER, M.: Thecoma of ovary associated with pleural effusion and ascites; Meigs' syndrome. *Ann. Int. Med.*, **20**: 132-140, January 1944.
5. GLASS, MORRIS, AND GOLDSMITH, J. W.: Fibroma of ovary associated with ascites and hydrothorax (Meigs' syndrome). *Amer. J. Obst. and Gyn.*, **43**: 1048-54, June 1942.
6. CALMENSEN, M., DOCKERTY, E. B., AND BIANCO, J.: Certain pelvic tumors associated with ascites and hydrothorax. *Surg., Gyn., Obst.*, **84**: 181-191, 1947.

DEPARTMENT
OF
OBSTETRICS

UNIVERSITY OF MARYLAND
SCHOOL OF MEDICINE

*Summary of Admissions
and
Perinatal Mortality*

July 1, 1952 through June 30, 1953

I. SUMMARY

	WHITE WARD	NEGRO	PRIVATE	TOTAL
1. Number of patients discharged.....	426	1522	1283	3231
2. Number of patients delivered and discharged (twins—28 sets).....	378	1380	1139	2897
A. Patients delivered of viable infants.....	360	1328	1071	2759
B. Patients aborting.....	18	52	68	138
3. Maternal Mortality				
A. Rate per 1000 live births.....	0.00	0.76	0.00	0.36
4. Number of viable babies born.....	362	1343	1081	2786
a. Term.....	327	1135	1011	2473
b. Premature*.....	33	196	61	290
c. Immature†.....	2	12	9	23
A. Number born alive.....	352	1317	1071	2740
a. Term.....	323	1126	1009	2458
b. Premature.....	28	181	58	267
c. Immature.....	1	10	4	15
B. Number stillborn.....	10	26	10	46
a. Term.....	4	9	2	15
b. Premature.....	5	15	3	23
c. Immature.....	1	2	5	8
5. Number of neonatal deaths.....	8	28	9	45
a. Term.....	4	6	4	14
b. Premature.....	3	14	1	18
c. Immature.....	1	8	4	13
6. Total perinatal mortality.....	18	54	19	91
a. Rate per 1000 live births.....	51.2	41.0	17.7	33.2
7. Rate deducting immature deliveries.....	45.5	33.2	9.3	25.5

* A premature baby is one which weighs between 1000 grams and 2499 grams.

† An immature baby is one which weighs between 400 grams and 999 grams.

II. TOTAL DELIVERIES BY NUMBER OF PRENATAL EXAMINATIONS

NUMBER OF EXAMINATIONS	WHITE WARD	NEGRO	PRIVATE	TOTAL	FETAL LOSS	
					Number	Per cent
0.....	49	105	2	156	9	5.8
1-3.....	46	105	27	178	15	8.4
4-7.....	92	251	99	442	24	5.4
8 or more.....	135	825	905	1865	29	1.5
Elsewhere.....	12	8	17	37	3	8.1
Unknown.....	28	49	31	108	11	10.2
Total.....	362	1343	1081	2786	91	3.3

III. TOTAL DELIVERIES BY PRESENTATION

PRESENTATION	WHITE WARD	NEGRO	PRIVATE	TOTAL	FETAL LOSS	
					Number	Per cent
Vertex.....	337	1290	1032	2659	65	2.4
Breech.....	22	39	42	103	17	16.5
Face.....	1	3	2	6	1	16.7
Brow.....	0	0	0	0	0	0.0
Compound.....	1	1	1	3	3	100.0
Transverse.....	1	5	2	8	3	37.5
Unknown.....	0	5	2	7	2	28.6
Total.....	362	1343	1081	2786	91	3.3
Twins and other multiple births.....	4	30	20	54	8	14.8

IV. TOTAL NUMBER OF DELIVERIES WITH HEMORRHAGE

Antepartum Hemorrhage

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Placenta Previa.....	1	0.3	3	0.2	3	0.3	7	0.25	3	42.8
Abruptio Placenta.....	5	1.4	11	0.8	13	1.2	29	1.00	13	44.8
Marginal Sinus.....	1	0.3	3	0.2	1	0.1	5	0.21	1	20.0
Ruptured Uterus.....	0	0.0	2	0.1	0	0.0	2	0.07	0	0.0
Other causes.....	10	2.8	14	1.1	18	1.6	42	1.5	7	16.7
Total A.P. Hemorrhage....	17	4.7	33	2.5	35	3.2	85	3.0	24	28.2
No A.P. Hemorrhage.....	345	95.3	1310	97.5	1046	96.8	2701	97.0	67	2.5
Total deliveries.....	362	100.0	1343	100.0	1081	100.0	2786	100.0	91	3.3

* Postpartum Hemorrhage

Total P.P. Hemorrhage....	12	3.3	52	3.8	32	3.0	96	3.6		
No P.P. Hemorrhage.....	350	96.7	1291	96.2	1049	97.0	2690	96.4		
Total Deliveries.....	362	100.0	1343	100.0	1081	100.0	2786	100.0		

* Postpartum Hemorrhage is defined as blood loss of 500 cc. or more.

V. TOTAL OPERATIONS FOR DELIVERY

A. Forceps and Cesarean Section and Other Operations

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Low forceps, elective.....	178	49.2	628	46.7	771	71.2	1577	56.5	18	1.1
* Low forceps, indicated....	24	6.6	60	4.5	51	4.7	135	4.8	1	0.7
Mid forceps, elective.....	6	1.7	26	1.9	22	2.0	54	1.9	0	0.0
* Mid forceps, indicated....	4	1.1	10	0.7	10	1.0	24	0.9	0	0.0
Total forceps.....	212	58.7	724	53.9	854	78.9	1790	64.2	19	1.1
Cesarean Section.....	10	2.76	62	4.6	37	3.4	109	3.9	6	5.5
Breech, spontaneous.....	3	0.8	6	0.4	4	0.4	13	0.5	5	38.4
Breech, extraction.....	15	4.1	29	2.2	33	3.0	77	2.7	11	14.3
Breech, decomposition.....	0	0.0	2	0.1	1	0.1	3	0.1	0	0.0
Breech, forceps after coming head.....	5		12		19		36		0	
Total breech.....	28	5.0	89	2.7	38	3.5	93	3.3	16	17.2
Craniotomy & other destructive operations.....	0	0.0	1	0.1	0	0.0	1	—	1	100.0
Version and extraction (single).....	1	0.8	3	0.2	0	0.0	4	0.2	3	75.0
Version and extraction (multiple).....	0	0.0	0	0.0	2	0.2	2	0.1	0	0.0
Spontaneous.....	121	33.4	516	38.4	150	13.9	787	28.2	46	5.8

* Indicated forceps refer to delivery after 2 hours of second stage labor.

B. Episiotomy.

	WHITE WARD	NEGRO	PRIVATE	TOTAL
Median.....	237	817	884	1938
3° laceration.....	11	22	13	46
Per cent.....	4.6	2.7	1.5	2.4
4° laceration.....	12	31	18	61
Per cent.....	5.0	3.8	2.0	3.1
Mediolateral.....	3	6	22	31
3° laceration.....	0	0	0	0
Per cent.....	0.0	0.0	0.0	0.0
4° laceration.....	0	0	0	0
Per cent.....	0.0	0.0	0.0	0.0
Total episiotomies.....	240	823	906	1969

V.—Continued

C. Other Operations

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Cleidotomy.....	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Conversion.....	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hysterostomy.....	0	0.0	2	0.2	0	0.0	2	0.1	1	50.0
External version.....	0	0.0	5	0.4	13	1.2	18	0.6	0	0.0
Induction of labor by rupture of membranes.....	6	1.7	7	0.5	3	0.3	16	0.6	6	37.4
Pit. induction of labor.....	6	1.7	13	1.0	21	1.9	40	1.4	0	0.0
Induction of labor—other.....	10	2.7	25	1.9	7	0.6	42	1.5	0	0.0
Pit. stimulation in labor.....	1	0.3	19	1.4	18	1.7	38	1.4	2	5.3
Manual removal of placenta.....	18	5.0	36	2.7	40	3.7	94	3.4	—	—
Repair of cervical laceration.....	8	2.2	41	3.0	26	2.4	75	2.7	—	—
Repair of vaginal laceration.....	8	2.2	13	1.0	26	2.4	47	1.7	—	—
Prolapse of cord.....	1	0.3	4	0.3	0	0.0	5	0.2	3	60.0
Willelt forceps.....	0	0.0	1	0.1	0	0.0	1	0.1	0	0.0
Single transfusion.....	14	3.9	56	4.2	26	2.4	96	3.4	—	—
Multiple transfusion.....	2	0.6	36	2.7	17	1.6	55	2.0	—	—

D. Vertex Rotations

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Occiput Transverse.....	30	8.3	79	5.9	93	8.6	202	7.2	1	0.5
As such.....	4	1.1	2	0.3	1	0.1	7	0.2	0	0.0
Spon. Rotation.....	7	1.9	31	2.3	29	2.7	67	2.4	0	0.0
Forceps Rotation.....	13	3.6	32	2.3	35	3.2	80	2.9	0	0.0
Manual Rotation.....	6	1.7	14	1.0	28	2.6	48	1.7	1	2.1
Occiput Posterior.....	14	3.9	109	8.1	66	6.1	189	6.8	10	5.3
As such.....	5	1.4	56	4.2	21	1.9	72	2.6	7	9.7
Spon. Rotation.....	0	0.0	4	0.2	3	0.3	7	0.6	0	0.0
Forceps Rotation.....	5	1.4	32	2.4	34	3.1	71	2.6	1	1.4
Manual Rotation.....	4	1.1	17	1.3	8	0.7	29	1.0	2	6.9

VI. TOTAL NUMBER OF DELIVERIES ACCORDING TO PUERPERAL MORBIDITY

PUERPERAL MORBIDITY	WHITE WARD		NEGRO		PRIVATE		TOTAL	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.
One day fever.....	20	5.5	90	6.7	49	4.5	159	5.7
Puerperal infection.....	7	1.9	81	6.0	22	2.0	110	4.0
Febrile, other causes.....	8	2.2	64	4.8	18	1.7	90	3.2
Afebrile.....	327	90.4	1108	82.5	992	91.8	2427	87.1
Total.....	362	100.0	1343	100.0	1081	100.0	2786	100.0

VII. TOTAL NUMBER OF LIVE BIRTHS ACCORDING TO WEIGHT AND CONDITION AT DISCHARGE

BIRTH WT., GRAMS	WHITE WARD			NEGRO			PRIVATE			TOTAL		
	Total Live Births	Died	% Deaths	Total Live Births	Died	% Deaths	Total Live Births	Died	% Deaths	Total Live Births	Died	% Deaths
400-999.....	1	1	100.0	10	8	80.0	4	4	100.0	15	13	81.6
1000-1499.....	3	0	0.0	16	9	51.2	1	0	0.0	20	9	45.0
1500-1999.....	4	1	25.0	37	3	8.1	22	1	4.6	63	5	7.9
2000-2499.....	21	2	9.5	128	2	1.6	35	0	0.0	184	4	2.2
2500 & over....	323	4	1.2	1126	6	0.5	1009	4	0.4	2458	14	0.6
Total.....	352	8	2.3	1317	28	2.1	1071	9	0.8	2740	45	1.6

VIII. TOTAL NUMBER OF STILLBIRTHS ACCORDING TO WEIGHT

BIRTH WT. GRAMS	WHITE WARD			NEGRO			PRIVATE			TOTAL		
	Total Births	Still- Births	% Still Births	Total Births	Still- Births	% Still Births	Total Births	Still- Births	% Still Births	Total Births	Still- Births	% Still Births
400-999.....	2	1	50.0	12	2	16.7	9	5	55.5	23	8	34.8
1000-1499.....	6	3	50.0	20	4	20.0	2	1	50.0	28	8	28.6
1500-1999.....	5	1	20.0	45	8	17.8	23	1	4.3	73	10	13.7
2000-2499.....	22	1	4.5	131	3	2.3	36	1	2.8	189	5	2.6
2500 & over.....	327	4	1.2	1135	9	0.8	1011	2	0.2	2473	15	0.6
Total.....	362	10	2.8	1343	26	1.9	1081	10	0.9	2786	46	1.6

IX. TOTAL NUMBER OF STILLBIRTHS AND NEONATAL DEATHS ACCORDING TO WEIGHT

WEIGHT, GRAMS	WHITE WARD			NEGRO			PRIVATE			TOTAL		
	Total Births	Still- Births and Neonatal Deaths	%	Total Births	Still- Births and Neonatal Deaths	%	Total Births	Still- Births and Neonatal Deaths	%	Total Births	Still- Births and Neonatal Deaths	%
400-999.....	2	2	100.0	12	10	83.4	9	9	100.0	23	21	91.4
1000-1499.....	6	3	50.0	20	13	65.0	2	1	50.0	28	17	60.8
1500-1999.....	5	2	40.0	45	11	24.4	23	2	8.7	73	15	20.6
2000-2499.....	22	3	13.6	131	5	3.8	36	1	2.8	189	9	4.8
2500 & over.....	327	8	2.4	1135	15	1.3	1011	6	0.6	2473	29	1.2
Total.....	362	18	5.0	1343	54	4.0	1081	19	1.8	2786	91	3.3

X. ETIOLOGY OF PERINATAL MORTALITY

	PREMATURE			FULL TERM			TOTAL
	W. W.	Negro	Private	W. W.	Negro	Private	
Hemorrhage Intracranial.....	1	0	0	1	1	1	4
Precipitate labor.....	1	0	0	1	0	0	2
Breech.....	0	0	0	0	1	1	2
Anoxia.....	4	15	7	1	5	3	35
Placenta—Premature Separation of.....	4	5	3	1	2	2	17
Placenta Previa.....	0	2	2	0	0	0	4
Toxemia.....	0	7	2	0	3	0	12
Cord—Umbilical Compression of.....	0	1	0	0	0	0	1
Complications—Medical.....	0	0	0	0	0	1	1
Development—Anomalies of.....	1	4	1	2	2	1	11
Infections.....	0	0	0	1	0	0	1
Pneumonia.....	0	0	0	0	0	0	0
Septicemia.....	0	0	0	1	0	0	1
Prematurity.....	4	14	5	0	0	0	23
Atelectasis.....	0	6	0	0	4	0	10
Erythroblastosis.....	0	0	0	3	1	1	5
Undetermined.....	0	0	0	0	2	0	2

XI. CAUSES OF PREMATURITY AND IMMATURITY

	WHITE WARD	NEGRO	PRIVATE	TOTAL	FETAL LOSS	
					No.	Per cent
Induced Labor.....	2	17	3	22	5	22.7
Toxemia.....	0	11	2	13	2	15.4
Hemorrhage.....	2	6	1	9	3	33.3
Spontaneous Labor.....	33	191	67	291	57	19.5
Toxemia.....	4	23	8	35	1	28.6
Hemorrhage.....	7	10	10	22	10	45.4
Premature Rupture of Membranes.....	9	44	16	69	7	10.1
Multiple Pregnancy.....	0	16	11	27	4	14.8
Maternal Diseases.....	0	1	0	1	0	0.0
Cervical Pathology.....	2	18	0	20	3	15.0
Fetal Abnormalities.....	0	3	2	5	2	40.0
Fetus-Death-in-utero.....	4	14	2	20	20	100.0
Undetermined.....	7	62	18	87	10	11.5

XII. COMPLICATIONS

A. Total Number of Deliveries With Toxemia

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Acute Toxemia.....	17	4.7	83	6.2	22	2.0	122	4.4	4	3.3
Pre-eclampsia.....	17	4.7	80	6.0	22	2.0	119	4.3	4	3.4
Eclampsia.....	0	0.0	3	0.2	0	0.0	3	0.1	0	0.0
Chronic Hypertension.....	35	9.3	151	11.2	46	4.2	232	8.3	17	7.3
With toxemia.....	4	0.7	16	1.2	6	0.5	26	0.9	2	7.7
Without toxemia.....	31	8.6	135	10.0	40	3.7	206	7.4	15	7.3
Total.....	52	14.0	234	17.4	68	6.2	354	12.7	21	5.9

B. Total Number of Deliveries—Rh Negative

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	Per cent
Rh Neg.—sensitized.....	5	1.4	8	0.6	16	1.5	29	1.0	6	20.6
Rh Neg.—not sensitized.....	42	11.6	68	5.0	155	14.3	265	9.5	11	4.2
Rh Neg.—sensitization un- known.....	52	14.3	110	8.2	9	0.8	171	6.1	16	9.4
Other isoimmunization.....	1	0.3	0	0.0	1	0.1	2	0.1	0	0.0
Total.....	100	27.6	186	13.8	181	16.7	467	16.7	33	7.1

C. Total Number of Deliveries With Medical Complications

	WHITE WARD		NEGRO		PRIVATE		TOTAL		FETAL LOSS	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	Per cent
Heart Disease.....	4	1.1	23	1.7	18	1.7	45	1.6	2	4.5
No failure.....	4	1.1	18	1.3	16	1.5	38	1.3	1	2.6
Questionable failure.....	0	0.0	1	0.1	1	0.1	2	0.1	1	50.0
Failure.....	0	0.0	4	0.3	1	0.1	5	0.2	0	0.0
Tuberculosis.....	1	0.1	17	1.3	12	1.1	30	1.1	2	6.8
Pulmonary, active.....	0	0.0	2	0.2	1	0.1	3	0.1	0	0.0
Pulmonary, inactive.....	0	0.0	13	0.9	8	0.7	21	0.8	2	9.5
Elsewhere.....	1	0.1	2	0.2	3	0.3	6	0.2	0	0.0
Diabetes.....	2	0.2	11	0.8	4	0.4	17	0.6	1	5.9
Sickle Cell Anemia.....	0	0.0	5	0.4	0	0.0	5	0.2	0	0.0

D. Total Number of Deliveries With Syphilis

WHITE WARD		NEGRO		PRIVATE		TOTAL	
Number	% of Dels.	Number	% of Dels.	Number	% of Dels.	Number	% of Dels.
3	0.8	59	4.4	2	0.2	64	2.3

E. Prolonged Labor

	NUMBER	% OF DELS.	FETAL LOSS	
			No.	Per cent
Pitocin Stimulation.....	12	0.4	0	0.0
Spontaneous Delivery.....	8	0.3	3	37.4
Elective Forceps.....	24	0.9	1	4.2
Indicated Forceps.....	5	0.2	0	0.0
Cesarean Section.....	4	0.1	1	25.0
Breech.....	1	0.1	0	0.0
Total.....	54	1.94	5	9.3

F. Total Number of Deliveries by Pelvis

TYPE OF PELVIS	CASES			BY X-RAY			FETAL LOSS (CASES)		FETAL LOSS (X-RAY)	
	W. W.	Negro	Private	W. W.	Negro	Private	No.	%	No.	%
Normal.....	287	1032	1025	40	250	108	66	2.8	9	2.3
Contracted Inlet.....	5	46	6	1	30	2	3	3.5	3	9.1
Midplane Cont.....	3	44	14	3	34	11	1	1.6	1	2.1
Outlet Cont.....	8	53	14	3	36	5	5	6.7	0	0.0
Inlet and Outlet.....	0	10	1	0	7	1	1	9.1	0	0.0
Inlet and Midplane.....	1	17	1	0	7	1	2	10.5	0	0.0
Mid. and Outlet.....	0	24	6	0	16	3	0	0.0	1	5.3
Inlet, Midplane & O.....	0	1	0	0	0	0	0	0.0	0	0.0
Asymmetrical.....	0	1	1	0	1	1	0	0.0	0	0.0
Unknown.....	58	115	13	0	2	2	13	7.0	0	0.0
Total.....	362	1343	1081	47	383	134	91	3.3	14	2.5

XIII. CESAREAN SECTIONS

TYPE OF OPERATION	WHITE WARD	NEGRO	PRIVATE	TOTAL	FETAL LOSS	
					No.	%
Low Cervical.....	6	44	27	77	5	6.5
Classical.....	0	1	2	3	0	0.0
Classical with Tubal Sterilization.....	0	1	0	1	0	0.0
Low Cervical and Tubal Sterilization..	4	6	7	17	0	0.0
Classical and Hysterectomy.....	0	2	0	2	0	0.0
Extraperitoneal.....	0	8	1	9	1	11.1
Total.....	10	62	37	109	6	5.5

Indications for Cesarean Sections

1. Pelvic Contractions and Mechanical Dystocia.....	1	26	13	40	1	2.5
A. Contracted Pelvis.....	1	9	5	15	0	0.0
B. Uterine Inertia.....	0	14	5	19	1	5.3
C. Malpresentation.....	0	1	2	3	0	0.0
D. Large Fetus—Normal Pelvis....	0	2	1	3	0	0.0
2. Previous Cesarean Section.....	5	25	14	44	1	2.3
3. Hemorrhagic Complications.....	1	5	4	10	3	30.0
A. Abruptio Placentae.....	0	1	3	4	2	50.0
B. Placenta Previa.....	1	3	1	5	1	20.0
C. Ruptured Uterus.....	0	1	0	1	0	0.0
4. Toxemia.....	1	3	3	7	0	0.0
5. Diabetes.....	0	1	1	2	0	0.0
6. Miscellaneous.....	2	2	2	6	1	16.7
A. Elderly Primigravida.....	0	0	0	0	0	0.0
B. Prolapse of Cord.....	1	0	0	1	1	100.0
C. Bad Obstetrical History.....	1	1	0	2	0	0.0
D. Other.....	0	1	2	3	0	0.0

XIV. THERAPEUTIC ABORTIONS

WHITE WARD	NEGRO	PRIVATE	TOTAL
0	0	0	0

XV. STERILIZATIONS

Type of Operation				
A. Tubal, puerperium.....	4	23	2	29
B. Tubal, not pregnant.....	0	0	0	0
C. Accompanying Cesarean sect.—tubal ligation.....	4	7	7	18
D. Accompanying therapeutic abortion—hysterotomy & tubal ligation.....	0	0	0	0
E. Accompanying Cesarean sect.—hysterectomy.....	0	0	0	0
F. Hysterectomy, not pregnant.....	2	5	2	9
Total.....	10	35	11	56

Indications for Sterilizations

Diabetes.....	0	1	1	2
Previous Section.....	4	6	5	15
Hypertensive Disease.....	1	3	0	4
Multiparity.....	4	20	1	25
Heart Disease.....	0	0	1	1
Other.....	1	5	3	9
Total.....	10	35	11	56

XVI. MATERNAL DEATHS

Total live births.....	2740
Total Maternal Deaths.....	1
Total Maternal Death Rate.....	0.36 per 1000 live births
Registered Births.....	2485
Maternal Deaths in Registered Patients.....	1
Maternal Death Rate in Registered Patients.....	0.4 per 1000 reg. births
Maternal Death in Non-registered Patients.....	0
Maternal Death Rate in Non-registered Patients.....	0

E.H.U.H. #002-3-55. This patient is a 20 year old negress, a para 1-0-0-0 whose EDC was 4-8-53. She registered in the clinic on October 15, 1952. She was very uncooperative during the prenatal course during which time an attempt was made to establish the diagnosis of diabetes which was highly probable. On January 19, 1953, she came to the dispensary because of symptoms of an upper respiratory infection. The diagnosis of pneumonia was made and she was admitted to the hospital the same day. She was treated as a diabetic as well as for the pneumonia following admission. Labor began the same day and she delivered without difficulty of a premature, stillborn, breech, weighing 2245 grams. Her temperature returned to normal limits following delivery and in the puerperium a diabetic regime was begun and the diabetes was brought under rather easy control. She remained in the hospital for 20 days and was discharged February 9, 1953, with a diagnosis of diabetes, acidosis, preeclampsia, pneumonia and premature labor. Four days after discharge on February 13, 1953, she was admitted to St. Joseph's Hospital. She died shortly after admission with an autopsy diagnosis of pulmonary embolism.

CLINICO-PATHOLOGIC CONFERENCE

FROM THE CASE HISTORIES, UNIVERSITY HOSPITAL, BALTIMORE, MARYLAND

Clinical History

This fourteen year old colored male was first seen in the Accident Room of the University Hospital on July 15, 1952 at 8:30 A.M., complaining of severe cramping abdominal pain which had been present on arising early in the morning. This pain was preceded by one episode of vomiting. At this time, his temperature was 99.2°F.; white blood cell count, 10,100 per cu. mm.; and hemoglobin, 99 per cent.

After two hours in the Accident Room, his pain subsided, only to be followed by the occurrence of precordial pain which lasted approximately one half-hour. The relief was effected by 50 mgm. of Demerol. After an undetermined period, he developed severe pain, this time in the left arm, the left lateral chest, and the left hand. Again, he received 50 mgm. of Demerol. This pain subsided, followed by a feeling of numbness in the left knee. By midnight July 15, he had slight pain experienced on flexion of the head. On the morning of July 16, he again was aroused by sharp pain. At 9:30 A.M. a loud systolic aortic murmur was noted. His systolic blood pressure was 160 mm. of mercury and his diastolic, 20. He had marked spasm of the erector muscles of the neck. On raising the extended leg, there was spasm of the hamstring muscles, but there was no associated pain. There was bulbar and palpebral conjunctivitis, but no photophobia. The skin was hot, dry and unblemished. (There were several round healed scars on the pretibial areas.) The temperature at this time was 104°F. rectally. There was a heavy mucoid secretion in the nasal passages. The airway was adequate. There was a bright red polypoid mass in the socket of one of the left molar teeth. A bright red petechial area was perceived in the center of the palate. There were several enlarged lymph nodes in the neck. The thyroid was soft and slightly enlarged. There was no venous congestion. Visible carotid pulsations were noted. The heart was of normal size and contour. The sounds were loud. A very harsh systolic murmur which spread over the precordium was heard best left of the sternum in the third interspace. There was a questionable short diastolic murmur, too, in the aortic area. There was a reduplication heard best at the apex of the second cardiac sound. The abdomen was tense, but no pain or tenderness was elicited on palpation. There was slight gaseous distention. The liver, the kidneys and the spleen were not palpated. At this point of the examination, the patient was asked to raise his legs to relax his abdominal wall, but could not.

Examination of the lower extremities revealed complete loss of motor and sensory function. During the examination of the legs intercostal breathing ceased. At this time a lumbar puncture was performed. When the patient was prepared for lumbar puncture, his left arm became weak. This weakness was rapidly followed by complete paralysis and loss of sensation. At this time, the right arm was still functioning. Respirations were diaphragmatic. Lumbar puncture was performed in the fourth lumbar interspace without difficulty. The initial pressure was 396 mm. of water. Seven cubic centimeters of cloudy, xanthochromic fluid were withdrawn before the

flow stopped. The final pressure could not be obtained as there was no rise or fall after compression of the jugular vessels. The spinal fluid showed 5400 erythrocytes, 5 polymorphonuclear neutrophils, and 2 lymphocytes per cubic millimeter, with three plus xanthochromia. By the end of the lumbar puncture, the right arm had become completely functionless, and there was a loss of sensation and motor function up to the level of the third thoracic dermatome.

The patient was taken immediately to the ward and placed in a respirator. The diagnosis at this time was compression of the spinal cord. A preparation of the patient's blood sickled. A consultant raised the question of other causes of the block and paralysis and recommended immediate laminectomy. Prior to operation, an additional sickling test done for fifteen minutes under sodium bisulfite showed a 98 per cent sickling. Other laboratory tests showed a bleeding time of 3.75 minutes and a clotting time of 7.0 minutes. Blood leukocytes numbered 13,100 just before operation.

In the operating room, a laminectomy was promptly performed. A nonpulsating spinal cord was revealed from the level of the sixth thoracic vertebra down. The cord appeared swollen and white. When the dura was opened, the spinal cord bulged. The operation was completed at 5 P.M. on July 16. During the entire operation the patient was "bag breathed" with pure oxygen. On arrival at the ward, his temperature was 104°F. He was replaced in the respirator. Artificial respiration was applied. At 8:05 P.M., normal salt solution was given intravenously. At this time, his pulse was 106 per minute. Immediately after starting the intravenous infusion, his pulse could not be felt and auscultatory examination failed to reveal heart sounds. He was pronounced dead at 8:15 P.M.

Clinical Discussion

Dr. T. Nelson Carey: We have here a catastrophe that has happened to a fourteen year old Negro male. Whether the same thing would happen to a white boy, I do not know. We talk about the race because the patient had sickle cells in his blood. You know that sickle cell anemia may be defined as a hemolytic anemia observed in the Negro, and characterized by bizarre shaped red cells, hemolytic jaundice and a tendency for venous clotting. I suppose that the clots are formed in the veins rather than in the arteries because the red cells change shape after anoxia has developed. A few years ago, Dr. Thompson sent from one of the other hospitals an autopsy protocol of a colored boy who, though completely unconscious, presented very few neurologic signs. At autopsy it was found that he had thrombosis of his dural sinuses and dural veins. Sick cells were seen in the postmortem sections. It was felt that the patient had sickle cell anemia and thrombosis of the dural veins as the cause of coma and death. Could this picture be the result of thrombosis of vessels in the cord? I am not sure. I presume that it might, and maybe that is what Dr. Wagner has in reserve for us. Actually, this boy was not anemic, and I am not sure whether thrombosis develops in patients with meniscocytosis but no anemia. There is a great deal of discussion of the separate pictures of sickle cell trait which involves great numbers of Negroes, and sickle cell anemia, which occurs in only three per cent of the people who demonstrate sickling.

Sickle cell trait might be responsible for thrombosis of vessels in the cord. Thrombosis might cause the bulging. Could thrombosis in the cord be responsible for the hypertension or the queer heart findings or acute onset with suspected appendicitis? About nine years ago, a 17 year old boy was admitted here with foot drop on one side and hypertension of 170/100. He had been taken suddenly ill that afternoon while playing football. He had been tackled. He felt sick and vomited, and complained of severe pain in the right subscapular area. He had abdominal pain. On admission, there was foot drop on one side, hypertension, and some queer heart sounds resembling pericardial friction rub. He had no pulse in one foot. X-ray of his chest showed a very wide vascular stripe. We were able to make a clinical diagnosis of dissecting aneurysm and prove it at autopsy. Many of the things in this case are similar. The age, the sudden onset, the physical findings of the heart, the blood pressure are all very much alike. The other characteristics that are sometimes observed in dissecting aneurysm such as disappearance of pulse are not here, but they do not have to be. You know that in dissecting aneurysm hemorrhage begins in the walls of the aorta. The pool of blood collects between layers of the aortic coats, the same pool dissects along the aorta following the tributary vessels, sometimes obliterating the pulse in the arm, sometimes obstructing the stream to an organ—kidney, spinal cord or brain.

Here we have a boy with a sudden vascular catastrophe, I am sure. Not only does he have trouble in his spinal cord, but he has evidence of blood disease. If we make a diagnosis of dissecting aneurysm we are making two diagnoses, whereas we should make only one. The onset is much too sudden for tumor. Viral infections can cause some queer things. Ascending neuronitis develops in a matter of days—not so quickly as this. The weakness and paralysis rise slowly and gradually recede, so I think that is not very likely in this case. We see the same picture in infectious mononucleosis, but again this is a more slowly developing illness. Is there a possibility that this patient could have had endocarditis and a septic infarct? We mention this for the sake of completeness, but I should rule it out. I should say that this boy had a dissecting aneurysm, and that the sickle cells were put in just as an added bit of information and had no real bearing on the cause of death.

Senior Student: How do you explain the cord findings?

Dr. Carey: I should say hemorrhage into the cord. Thrombosis of the cord is a venous phenomenon, not arterial.

Dr. R. G. Coblenz: How about epidural abscess? This is sometimes very sudden and progress is very fast.

Dr. R. E. Bauer: We saw this boy before, and thought he had an epidural abscess, but then we took a sickle count and found that he had 90 per cent sickle cells. We went into the operation feeling that the whole thing could be explained on sickle cell thrombosis of the cord.

Dr. Henry Startzman: This is a myelogram taken after pantopaque was injected into the subarachnoid space and you can see the column of pantopaque which extends approximately up to the seventh thoracic vertebra (Fig. 1).

Dr. F. J. Borges: The chest was negative. There is no vascular stripe and the aortic murmur was very striking. The diastolic was very questionable.

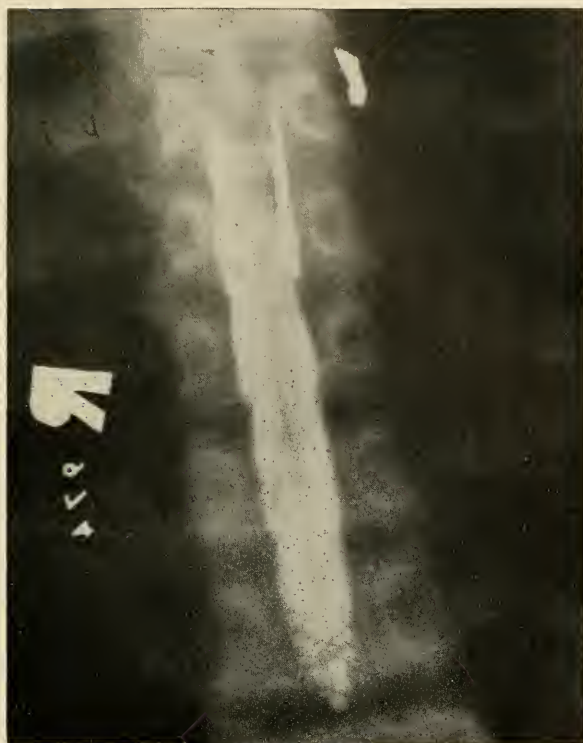


FIG. 1

Dr. Carey: Was a blood culture done?

Dr. Borges: No.

Senior Student: Can you explain the sudden onset of the disease?

Dr. Carey: It is said that only $2\frac{1}{2}$ per cent patients who have sickle cells have sickle cell disease. Having sickle cells does not prevent this boy from having something else.

Dr. T. E. Woodward: Certainly nothing in this protocol suggests virus infections that cause spotty lesions in the central nervous system. A condition that might cause multiple thrombosis is thrombocytopenic purpura in which one gets multiple thrombi throughout the body. Thrombi could explain the phenomena seen in this patient. As Dr. Carey suggested, cardiac thrombi or vegetations might be incriminated as sources of emboli. Is there any evidence that the heart murmurs changed while he was here?

Dr. Borges: Not as far as we know.

Dr. Bauer: I do not think there was time to evaluate a change of heart sounds. He was under observation for just twenty-four hours before he died. Our diagnosis in the hospital was epidural abscess.

Dr. R. M. N. Crosby: I think this is a good opportunity to emphasize sickle cell crises without anemia. Such, I believe, is the case here.

Dr. Carey: Sickle cell disease can be associated with clotting, but not with the

heart murmur. I think there was time to see whether there was any change in the heart murmur.

Pathological Discussion

Dr. John A. Wagner: At autopsy, the body of a thin colored adolescent male, 176 cm., was observed. In general, the external examination of the body was not remarkable except for the surgical wound in the back of the neck and upper thorax which measured 12 cm.

Upon opening the body, the viscera were apparently normally disposed and individually normal. Aside from moderate congestion of the individual abdominal and thoracic organs, no significant lesions were grossly observed. All organs were of normal size and weight. Gross examination of the scalp and skull revealed no abnormality. In situ, the brain appeared symmetrical. The convolutions showed slight flattening, as though by intracerebral swelling. There is no external evidence of hemorrhage. The cranial nerves in the dural sinuses as well as the hypophysis showed no gross change. A longitudinal incision was present through the dura of the spinal cord dorsally covering the lower cervical and upper thoracic segments. The spinal nerves were grossly normal. No extradural lesions or hemorrhages were noted. A moderate amount of extradural hemorrhage was seen. The brain weighed 1800 grams.

After fixation, examination of the spinal cord showed in the thoracic region, beginning 7 cm. from the proximal portion, a linear wound in the dura, 2.5 cm. in length, closed with interrupted silk. With the dura reflected, the spinal cord showed considerable swelling in the cervical region for a distance of 5 cm. In the region of the operative wound, the cord appeared normal. However, at the beginning of the lower pole of the wound, and extending for 9 cm. throughout the thoracic area, there was considerable fresh hemorrhage into the subarachnoid space. This continued for a distance of 3 cm. into the lumbar area of the cord. The cauda equina and the conus medullaris were intact. In the cervical area, occupying the areas of about the third to the fifth segment, there was a slight internal hemorrhagic pachymeningitic change. This appeared unassociated with the operative wound.

Examination of the cut sections of the spinal cord showed in the cervical region a hemorrhage occupying the central portion of the cord and extending laterally through the dorsal horn into the junction between the dorsal and lateral funiculi. This pattern continued more or less with a variable degree of hemorrhage down through the cervical area into the upper thoracic zone. In some places, the central portion of the cord was occupied by a distinct hemorrhage. At the level of the eighth or ninth thoracic segment, and in the midportion of the hemorrhagic zone described above, the spinal cord was at least two-thirds destroyed by a central hemorrhage, measuring 6 cm. in size and which occupied all but 1 mm. of the surrounding spinal cord, sparing the entire ventral and lateral funiculi, half of the lateral funiculus, and with distortion of the entire dorsal area. Further sections through the spinal cord showed the entire central portion of the cord occupied by hemorrhage, including all of the thoracic areas. Further sectioning down into the lumbar areas showed the cord to become slightly smaller, the central hemorrhage continuing.

Examination of the brain showed a slight degree of convolutional flattening;

however, no external abnormalities were seen. On section, there was slight flattening of the ventricles (edema), but no other gross areas were present. The brain stem was the only sign of intrinsic cerebral disease. There was a considerable amount of fresh blood in the fourth ventricle, this extending to the cerebral aqueduct. The blood did not extend into the third ventricle. Sections through the midbrain and pons showed only the presence of blood in the fourth ventricle and cerebral aqueduct. The medulla showed a slight asymmetry with enlargement of the tegmental area on the right side and on the left side, there being present in it a small linear slit, 2 mm. in size, containing a small amount of fresh blood. This cavity lay just beneath the fourth ventricle and traveled for a distance of 2 cm. down the left side of the medulla toward the midline, becoming continuous with the spinal cord at its proximal junction. There was no definite perforation point between the cavity and the floor of the fourth ventricle which was filled with blood.

Microscopic studies revealed a normal pituitary gland. The cerebral cortex was also generally normal except for congestion and slight edema.

Studies of the spinal cord showed extensive hemorrhagic destruction throughout much of the cervical spinal cord, the erythrocytes being found in the hemorrhagic area showing almost 100 per cent sickling. In the cervical area, there were found clumps of cells which were distinctly abnormal in that they appeared rather large with deeply basophilic nuclei, containing stippled chromatin and a variable amount of irregularly staining cytoplasm. Occasional suggestive mitoses or pyknotic forms were seen. There were other cells, possessing a faintly staining cytoplasm and a central nucleus plainly vesicular with an occasional chromatin dot. Occasional cells showed double nuclei, and a few showed rather definite mitoses. These cells appeared intermingled with the fresh blood. They were not found in the subarachnoid space. The leptomeninges over the tumor showed hyperplasia. There was a slight extension of the tumor in one area to a nerve root. Additional sections confirmed the retention of the tumor growth within the spinal cord by a thin layer of pia arachnoid. The hemorrhage, of course, has broken out into the subarachnoid space, and into the central canal and central portion of the spinal cord almost simultaneously. Microscopically, the hemorrhage extended up to the medulla with rupture into the fourth ventricle. The tumor growth, however, was strictly limited to the cervical spinal area. Repeated sections of the entire spinal cord showed no evidence of phlebothrombosis or any vascular lesion which could be associated with sicklelemlia. The tumor growth extended from about the first cervical segment down to the ninth thoracic segment, there being apparently two outcroppings of the tumor, one in the mid-cervical, and one in the lower thoracic area.

Comment

Dr. J. A. Wagner: The tumor growth seen in this case is most likely (although histologically not completely proven) an astrocytoma, intrinsic and primary in the spinal cord. With this tumor there has appeared an apparent spontaneous hemorrhage into the subarachnoid space. The ascending and descending hemorrhage well accounts for the bizarre neurologic symptoms and signs and for the ultimate demise of this individual as the blood ruptured through the central area of the cervical cord into the fourth ventricle, ascending to the cerebral aqueduct.

It is not felt that from the pathologic point of view, sicklemia played an initiating role in the symptomatology. The possibility of sicklemia playing an adjunct role cannot be eliminated.

The tumor growth appears to be of the astrocytic or macroglial group. It appears thus because of the general uniformity of the cells and the fact that the pia mater has apparently and effectively contained the tumor within the spinal cord prior to rupture. It is seen in one lateral funiculus only and although having two foci (a small one in the upper cervical and a larger one in the lower thoracic), appears to be of the spinal astrocytic type. The difficulty in obtaining metallic impregnations on such a small specimen has rendered impossible a positive and irrefutable confirmation of this tumor as a glioma, but its general appearance under hematoxylin and eosin as well as its behavior seems to point in that direction. The possibility of a low-grade malignant change in this astrocyte is indeed a real one. The other two possibilities are an atypical oligodendroglioma of the spinal cord and a peculiar type spinal sarcoma.

It is well known that the most common intramedullary tumor in the spinal cord is an ependymoma. This tumor, no matter what the type, is therefore of a relatively uncommon variety. The occurrence of spontaneous hemorrhage with glioma is estimated to be about four per cent. Many of these gliomata are virtually asymptomatic until the hemorrhage occurs. Spontaneous hemorrhage into a brain (or spinal cord) tumor is therefore the chief initiating factor in symptomatology and indeed, this patient showed signs and symptoms only of a hematomyelia prior to death. The finding of the tumor is an incidental fact.

One must also always therefore consider the possibility of hemorrhage into a pre-existing neural tumor in any case of certain apoplectiform type of hemorrhage, whether it be into the brain or spinal cord.

Final Anatomical Diagnosis

Astrocytoma, cervical thoracic spinal cord; spontaneous hemorrhage into tumor; hematomyelia, primary; hemorrhage, subarachnoid, spinal, secondary; hemorrhage, intraventricular, secondary (proven sicklemia).

Dr. T. Nelson Carey: Dr. Wagner, can you explain the murmurs in the heart?

Dr. Gerardo B. Polanco: I performed the autopsy, and there were no lesions in the heart to explain the murmur.

OBSTETRICAL CASE STUDY*

The patient was 38 years of age, colored, para 8-0-1-8 and was admitted to the hospital at seven P.M. on July 20 at term and in early labor. She had received prenatal care in the clinic. Her course there had been uneventful. On admission physical examination was negative. The position of the fetus was LOA, the head was fixed in the pelvis, the fetal heart rate was 150 in the left lower quadrant. The height of the fundus measured 31 cms. The cervix was found well effaced, 5 cms. dilated, with the presenting part 1 cm. above the ischial spines and the membranes intact. She was given 100 mgm. of Demerol® and 0.4 mgm. of scopolamine intramuscularly. Labor progressed rapidly and at 7:47 P.M. she delivered spontaneously a living female child weighing 3972 grams. Trilene® analgesia was used for delivery. Five minutes after delivery the placenta and membranes were expressed complete from the vagina and lower uterine segment by suprapubic pressure. There were no cervical or vaginal lacerations. Following delivery of the placenta, the patient was given 0.5 cc of Pitocin® intravenously. In spite of this and continued gentle uterine massage, the uterus did not contract well. As the uterus relaxed there was an increase in the amount of postpartum bleeding. Massage was continued and ten minutes after delivery Ergotrate® was given intravenously. The bleeding appeared to decrease somewhat but continued to be in excess of normal. Blood was drawn for cross-matching and an intravenous infusion of 5 per cent glucose in water was begun through a transfusion set. Then, 20 minutes following delivery, the patient was again prepared and the vagina, cervix, and uterus explored. No lacerations were found and the uterine wall appeared free of retained placental fragments. One cc. of Pitocin was now added to the infusion and uterine massage through the abdominal wall continued. The tone of the uterus continued to be less than satisfactory and the slow ooze of blood from the vagina continued. At this time, 50 minutes after delivery, the patient's blood pressure had dropped from 130/85 to 100/70 and her pulse had increased from 82 to 110. Because of the inability to control postpartum bleeding in the manner stated, it was decided to perform hysterectomy while the patient's condition was satisfactory. Accordingly, using cyclopropane anaesthesia, a supravaginal hysterectomy was begun 1 hour and 10 minutes following delivery. The patient received 1000 cc. of blood during the operation and shortly after ligation of the uterine arteries, her blood pressure returned to its normal level. Convalescence was uneventful.

It has been aptly stated, "fear the grande multipara", for it is well known that both maternal and fetal complications increase when the mother's parity is greater than seven. In many clinics pregnancies beyond 8 are considered sufficiently hazardous to warrant a sterilization procedure upon the delivery of the eighth viable infant. Several factors contribute to this hazard. Changes in the uterine and abdominal walls leave a flaccid support for the fetus so that transverse presentation is favored. Scarring of the myometrium incident to repeated pregnancies produces weak areas through which spontaneous rupture of the uterus may occur. Placenta previa ap-

* From the Dept. of Obstetrics, Univ. of Md. School of Medicine.

pears more often when there are repeated pregnancies particularly if the intervals are short. There is a definite tendency for succeeding infants to increase in size so that babies of excessive weight at birth are more common. Since grande multiparity presents in an older age group, more degenerative diseases such as chronic hypertension appear. Age is also a factor in the more frequently associated neoplastic processes as uterine myomas.

In the case cited above, atony may well have been influenced by changes in the uterus brought about by repeated pregnancies. The management as outlined follows a generally accepted pattern. Uterine massage and oxytocic drugs will control the great majority of uteri which tend to relax postpartum. However persistence in these measures in the face of continued bleeding can lead only to catastrophe. Therefore effective treatment must be carried out before the amount of blood lost produces irreversible changes. The only satisfactory measure under such circumstances is hysterectomy plus blood transfusion.

MEDICAL SCHOOL SECTION

JUDGE COLE SPEAKS ON "LIVE AND HELP LIVE"

*Chairman of Board of Regents Closes 1952-53 Television Session**

Thank you, Mrs. Holland, for this opportunity to say a word in behalf of the University of Maryland before this splendid program adjourns for a well-deserved summer recess.

When Mr. Provost, the genial Vice-President and General Manager of WBAL, arranged for such a prominent spot in the station's crowded and highly interesting schedule for "Live and Help Live" to occupy, we welcomed the opportunity afforded thereby to inform the people of Maryland, to such extent as the program would permit, of the wealth of information and knowledge the activities of our University encompass. Such has been accomplished to only a partial extent, and we shall look forward to a renewal of the program in the fall. To realize that after a life of only eighteen months the program has an estimated audience of 300,000 people in Maryland each week; that it rates ten points, which is probably the highest achieved by any program devoted to public education, makes it difficult for me to find words sufficient to express our gratitude to those responsible for its prominent place with WBAL—especially to you, Mrs. Holland—and to those of our University Family, some of the leaders of whom you have seen and heard tonight, for the untiring energy and ability they have given to its preparation and rendition.

The main objective of all, as has been appreciated by the people of Maryland, has been to give information that will be useful for a healthier and fuller life. It is your University—you, the taxpayers, being largely responsible for its existence and whatever it does—and you are entitled to be told in just such ways as this opportunity has made possible some of its many worthwhile accomplishments.

The value of the services rendered by the University of Maryland to the people of our state is inestimable. It cannot be measured in dollars and cents. Consider the University Hospital, and Medical and Nursing Schools, for instance. The hospital itself is maintained as a teaching facility for the School of Medicine and Nursing. It is the medium and unit used for clinical teaching where, largely during the junior and senior years, students begin to learn at first hand diseases and the treatment of the same. The hospital is also the unit where the graduates of the Medical School serve as internes, residents, and assistant residents in getting more advanced knowledge in the treatment of diseases and in surgery.

You should know something about the expense entailed in this operation. The State provides 39% of the funds for the operation of the hospital, the balance of 61% coming from fees paid by patients and other charges, the total cost being nearly four million dollars per year. In the case of the Medical School, the State puts up

* Judge Cole's most pertinent remarks delivered over WBAL-TV on the occasion of the closing of the 1952-53 season of "Live and Help Live" were so interesting that the Bulletin requested him to revise the transcribed notes from the broadcast and prepare them for publication in the Bulletin. It is presented herewith.

65%, the remaining funds coming from student payments—the aggregate being approximately \$830,000 for the current year. Stating this information in the alternative, one and one-third cents of each dollar paid by the taxpayers of Maryland goes toward the support of the Medical School and Hospital. Eliminating the School of Medicine from this picture, a little less than one cent of each dollar paid to the State is paid towards the support of the Hospital. Considering the broad scope of its activities, this is a most worthwhile investment.

I share your disappointment tonight in the fact that Doctor Byrd is not with us. He happens to be in Europe on a special errand for the University. I received a cablegram from Doctor Byrd this afternoon, expressing his disappointment in not being able to be with us tonight, and also his congratulations and best wishes to all those who have made this program so successful.

The Board of Regents of the University is proud of the subject matter discussed during the rendition of the program, and of the personnel who have so ably given their time and services. We felt at the outset, and we feel more so at this time, that a real service would be rendered the people of Maryland as a result of this effort, and we are glad, at this stage of its already phenomenally successful effort, to say—"Well done and welcome back to the people of Maryland in the fall."

MERCY HOSPITAL NEWS SECTION

VISITING STAFF NEWS

Dr. Theodore A. Schwartz was recently appointed Acting Head of the Department of Otolaryngology, replacing Dr. Waitman F. Zinn, who resigned in March.

Dr. James L. Gerlach has successfully passed the American Board of Otolaryngology.

A golden Anniversary in the medical profession was celebrated in June by Dr. Edgar Friedenwald. Dr. Friedenwald, who for many years was quite active on the Mercy Staff as Chief of Pediatrics, has now retired, and is writing a volume on Pediatric history in Baltimore.

Dr. Joseph C. Sheehan, formerly active on Mercy's Gyn/Obs staff, is now practicing in Annapolis. Dr. Daniel R. Robinson, formerly an active Surgeon, is now associated with the Veterans Administration Hospital, Fort Howard, Md.

Several active members of the Mercy Visiting Staff have organized a new association—the Medical Alumni Association. Under the leadership of chairman Dr. Theodore A. Schwartz, several initial meetings were held in June, and the aims and purposes of the group discussed. It was felt that this type of organization would help to bring closer harmony between the hospital and staff, and at the same time provide a "homecoming" for former House Officers. A nominating committee was appointed consisting of Drs. Daniel J. Pessagno, Frank Morris, Simon Brager, and Joseph Jerardi, and the following officers elected: President, Dr. J. Sheldon Eastland; Vice-President, Dr. Henry F. Bongardt; Secretary-Treasurer, Dr. Theodore A. Schwartz; Executive Committee, Drs. John O'Connor, Chairman, Raymond F. Helfrich, Edwin S. Muller, Sol Smith, and Vincent dePaul Fitzpatrick, Jr. There will be one annual meeting and Convention, which will consist of a scientific, social and athletic program.

Dr. Charles E. Brambel, Director of the Anticoagulant Clinic, attended the Gordon Research Conferences sponsored by the American Association for the Advancement of Science for 1953, held at the Colby Junior College, New London, N. H. On August 20, he presented a paper on "Pharmacological and Clinical Studies on Anti-coagulants."

RESIDENT STAFF

(Corrections and Additions to Staff Listing in April issue, Bulletin.)

MEDICINE:

Dr. Harry B. Scott, *Senior Assistant Resident Medicine*
 Dr. Owen B. Cassidy, *withdrew contract as Asst. Resident Medicine*
 Dr. Victoria Palarca, *Junior Assistant Resident in Medicine*

PEDIATRICS:

Dr. Yung Tsing Wong, *withdrew contract as Resident.*
 Dr. Herbert Eckert, *Resident Pediatrician.*
 Dr. Rita Scheller, *Assistant Resident Pediatrician.*

PATHOLOGY:

Dr. Francis J. Januszkeski, *Resident*

INTERNES:

Dr. George H. Beck	Dr. Thomas C. Lee
Dr. James G. Boyes, Jr.	Dr. George H. Miller
Dr. Charles F. Carroll, Jr.	Dr. Joseph F. Palmisano
Dr. Donald S. Carter	Dr. Corbett L. Quinn
Dr. Roy J. Fischer	Dr. Richard E. Schindler
Dr. Leonard H. Flax	Dr. James R. Troxel
Dr. John W. Heisse, Jr.	Dr. David G. Wallin
Dr. Thomas L. Jones	Dr. Jack T. Watson
	Dr. Harry S. Weeks

Dr. Clyde D. Thomas, Jr., Resident Surgeon last year, is a temporary Fellow in the Anticoagulant Clinic at Mercy, awaiting definite orders from the Navy. Under the direction of Dr. Charles E. Brambel, Dr. Thomas is assisting with experimental thrombosis work in a research program furnished by the Army.

WOMEN'S AUXILIARY OF MERCY HOSPITAL

"Mercy Mart" is a new addition to Mercy Hospital's front hall. It is a lovely gift shop, opened on May 13 by the Women's Auxiliary. The shop, managed exclusively by the ladies, has become a popular place for visitors and personnel alike.

The big annual benefit of the Auxiliary will be held this fall on October 3, at the Fifth Regiment Armory, with the theme "Aloha". The evening will consist of a Variety Show and Dance, and a raffle of a round trip to Hawaii, or a \$500.00 merchandise certificate.

MEDICAL LIBRARY NOTES

The library appreciates the books and journals presented by the following donors in the period from May first to August first:

Mrs. Harvey Beck	Dr. A. M. Kraut
Dr. M. P. Byerly	Mrs. Samuel Novey
Dr. F. G. Dickey	Dr. R. H. Oster
Emerson Drug Company	Dr. M. C. Pincoffs
Dr. F. W. Hachtel	Dr. J. E. Savage
Dr. J. C. Krantz, Jr.	Dr. H. B. Wylie

Among the volumes given the library by the Emerson Drug Company were two of special interest because of their historical aspect:

Comstock, John Lee, *A system of natural philosophy*. New York, 1836.

Pereira, Jonathan, *Elements of materia medica and therapeutics*; 2d American from last London edition. v.1. Philadelphia, 1846.

Because of acute shortage of space in the library, it was necessary this past summer to send several thousand volumes to storage (to be held until a new library building is provided). The card catalogue indicates by colored cards the titles now unavailable for use.

In the subsequent rearrangement of the library collection to gain needed space on the main floor, the basement is used entirely for serials: periodicals before 1940 and various yearly publications.

FIRST INTERNATIONAL CONGRESS ON MEDICAL LIBRARIANSHIP

School of Medicine, University of Maryland, Represented

The First International Congress on Medical Librarianship was held in London, July 20-25, 1953. The term "medical librarianship" was used in its broadest meaning, to include all fields of the health sciences and thus all librarians connected with medicine, dentistry, pharmacy, nursing, and their subdivisions.

When the idea of an international congress was first conceived in 1952 by a group of British medical librarians, they had serious doubts about the organization of such a meeting and the possible response of medical librarians in other countries. It was the encouragement of Sir Cecil Wakeley, President of the Royal College of Surgeons in England, which induced the group to make their idea a reality. They formulated plans with the thought that if only a few medical librarians gathered from several countries, it would be a good beginning.

The immediate interest of medical librarians was gratifying and the ultimate attendance far beyond expectation. Three hundred and fifteen medical librarians attended the congress, representing 32 countries and 3 international organizations. Every continent was represented, including New Zealand, the most distant point. As might be expected, the largest membership was from the British Isles; the United States second, with more than 40 representatives.

Sir Cecil Wakeley acted as president of the congress, and honorary vice presidents were named from various parts of the world. At the opening session, after the presidential address, each vice president was introduced and brought greetings from

his country and organization. The Director of our Armed Forces Medical Library, the largest medical library in the world, was among the speakers.

Daily sessions of the congress were held at the University of London. Symposia covered such subjects as The Role of the Medical Librarian in the World Today; Education and Training for Medical Librarianship; Centralization of Medical Library Resources; and International Cooperation. French and English were the official languages of the congress, with an interpreter and translator present to give resumés.

The sessions for scientific papers were supplemented by extensive displays, both at the congress headquarters and in London libraries. An exhibit was held at the British Medical Association Library, showing 2,200 current medical periodicals of the world. The display was divided by broad subject into medicine, dentistry, pharmacy, etc. Medical books and library equipment were displayed at University College, London. The history of medical libraries was covered by an exhibit at the Wellcome Historical Medical Library, London. Space was also provided for a 60-foot display of the United States Armed Forces Medical Library, showing its scope and services.

Members of the congress were extensively entertained by medical organizations, including the Royal College of Surgeons, the Ciba Foundation, the British Medical Association, the Royal Society of Medicine, the Royal College of Obstetricians, the Worshipful Society of Apothecaries, the Wellcome Research Institution, and the Royal College of Physicians. Some of these organizations are housed in historic buildings of great interest, not usually open to the public.

It had been suggested that the final session of the congress be devoted to organizing an international medical library association. When the time came, however, it was the general agreement of the members that such an organization would take more preliminary consideration and planning than had been possible in the preceding week. It was therefore decided that a committee be chosen to plan the next international congress, perhaps 5 years hence. At that time suggested plans for an international organization would be presented. Accordingly a committee of 9 members representing various countries was elected. A former president of the American Medical Library Association is the representative from the United States.

The most stimulating aspect of the congress was the contact with colleagues from all parts of the world. There were pleasant reunions with several of the librarians from other continents, who have in the past few years visited our libraries to observe methods used in the United States. Numerous other European and South American librarians formerly "known" through correspondence were present, making the previous acquaintance a more personal one. In addition, many new contacts were made that will increase our international professional friendships.

The professional schools of the University of Maryland sent their medical librarian to the congress to represent the libraries of medicine, dentistry, pharmacy, and nursing. This librarian was the only one present from the state of Maryland, a state rich in libraries of the medical sciences. It is gratifying that the School of Medicine, University of Maryland is willing to promote international contacts between its libraries and those of other countries.

IDA MARIAN ROBINSON

SINAI LECTURESHIP ANNOUNCED

Dr. Sidney Faber, Professor of Pathology at Harvard University School of Medicine will be the guest lecturer for the 1954 Jack W. Kolson Memorial Lecture. Dr. Faber will speak on "Approaches to the Chemotherapy of Cancer". The lecture will be held on March 25, 1954 at 8:30 P.M. in the Hurd Hall of the Johns Hopkins Hospital.

DR. PINCOFFS NAMED TO NATIONAL ADVISORY BOARD

Dr. Maurice C. Pincoffs, Professor of Medicine, has been recently appointed to the National Advisory Arthritis and Metabolic Diseases Council. His appointment was announced by Dr. Leonard A. Scheele, Surgeon General of the United States Public Health Service. As a member of the Council he will advise and make recommendations to the Surgeon General regarding activities of the National Institute of Arthritis and Metabolic Diseases located at Bethesda, Maryland. This is one of the 7 National Institutes of Health, the principal research arm of the United States Public Health Service. The Council is composed of 12 members, each a leader in science, education, and public affairs. In addition, there are 2 ex-officio members representing the United States Veterans Administration and the Department of Defense. The Council meets 3 times a year at Bethesda, Maryland.



THE MEDICAL SCHOOL AND HOSPITAL PLATES

Plates of the School of Medicine; the old Hospital and the new Hospital; University of Maryland, are available. These white plates are 10 inches in diameter with the design printed in black.

The price is \$2.50 each, plus fifty cents insurance and postage in the U. S. A.

Insurance and postage for foreign mail is one dollar. Please send your order, with check, stating the plates desired to Mrs. Pessie M. Arnurius, Box 123, University Hospital, Baltimore 1, Maryland.

Checks should be made payable to the NURSES' ALUMNAE ASSOCIATION OF THE UNIVERSITY OF MARYLAND.

POST GRADUATE COMMITTEE SECTION

POST GRADUATE COMMITTEE, SCHOOL OF MEDICINE

HOWARD M. BUBERT, M.D., *Chairman and Director*

Elizabeth Carroll, *Executive Secretary*

Post Graduate Office: Room 600

29 South Greene Street

Baltimore 1, Maryland

THE AUDIO-VISUAL SUBCOMMITTEE

The Audio-Visual Subcommittee of the Postgraduate Committee, under the Chairmanship of Doctor John C. Krantz, Jr., has been responsible for the Tuesday night television show "Live and Help Live", since the Postgraduate Committee was given the responsibility for this activity by the Dean and the Faculty Board in April, 1952. It is with deep regret that the resignation of Doctor Krantz is announced. Doctor Krantz's heavy professional commitments made it impossible for him to continue. The Chairman of the Postgraduate Committee has decided to act as Chairman of this subcommittee, and has enlisted the support of Mr. George H. Buck, Vice-Chairman, to handle all administrative matters pertaining to the show. In addition, Doctor John A. Wagner has accepted appointment as Vice-Chairman, assuming responsibility for programming during the coming 1953-54 season. Needless to say, production will continue in the capable hands of Anne Holland, assisted by personnel from Station WBAL-TV.

It is the sincere hope of all concerned that the high standard of excellence achieved will not only be maintained, but even surpassed.

The members of the Audio-Visual Subcommittee of the Postgraduate Committee are:

HOWARD M. BUBERT, <i>Chairman</i>	CARL D. CLARKE
GEORGE H. BUCK, <i>Vice-Chairman</i>	FRANK H. J. FIGGE
JOHN A. WAGNER, <i>Vice-Chairman</i>	JACOB FINESINGER
LOUIS A. M. KRAUSE	

LIVE AND HELP LIVE

Now in its third year, the University of Maryland Professional Schools' television show, "Live and Help Live", continues as a pace setter in the field of public service telecasts. Anne Holland, the show's Producer and ardent University booster, reports a constantly growing call from both schools and other TV stations, for kinescopes (movies to you) which are made of the show from time to time.

If the trend continues, and there is no reason why it shouldn't, serious thought may be given to going on network or, possibly, syndicating the show for even broader distribution. The latter could prove to be a real financial boon, the benefits of which

could serve not only the telecast, but a broad public relations program for the professional schools.


Locally, the show continues to attract approximately one hundred and fifty thousand viewers every week. It is hoped by those responsible for planning the show, that University Alumni are well represented among the regular viewers. Comments and criticisms are invited in the interest of an ever increasing quality of performance.

Although the general character of this year's scientific and professional programs has not been changed, an effort is being made to introduce continuity of theme in the telecasts from week to week. Programming has also taken into account the appropriate scheduling of productions dealing with seasonal diseases and subjects of unusual current interest.

Featured in this year's program schedule are two presentations by Dr. Louis A. M. Krause to be devoted to the theme, "Religion in Medicine". These shows will high-light the "Live and Help Live" series at the Christmas and Easter Seasons, following the 1952 precedent so well received by our viewing audience.

The University's avowed policy and unfaltering endeavor to serve the best interests of the people of Maryland have found a new and effective avenue of expression in "Live and Help Live". Working in conjunction with the generous public service policy of WBAL-TV, the Faculties of the Professional Schools have striven to bring to their viewers, programs not only of great interest and educational value, but of practical aid and helpful advice, particularly in the health field. That they have succeeded in this endeavor has been amply attested by the continuous and generous mail response, containing both commendation and requests for information in other subjects. As an extra service, the latter are answered by letter when the general subject cannot be included in the program schedule. In its own special way, "Live and Help Live" continues to serve the people of Maryland. A grateful public has returned its verdict, "An outstanding public service program".

GEORGE H. BUCK, *Vice-Chairman,*
Audio-Visual Subcommittee of the
Postgraduate Committee



*Earmark
your check
for your alma
mater — but
send it today*

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EDUCATION FOUNDATION
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Bulletin

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The names listed above are officers for the term beginning July 1, 1953 and ending June 30, 1954.

THE PRESIDENT'S MESSAGE

Recently our Alumni Association has received two contributions, acknowledgement of which will be found elsewhere in these pages. The first of these was from a relative of one of our graduates who had recently died and it was requested that the money be placed in our memorial fund. It should be noted here that the second gift was from a living alumnus and that there were no directions or instructions as to its use.

When these two gifts were brought to the attention of the Executive Committee of the Alumni Association it was noted that we did not have a memorial fund. The reason for this lack is not apparent, for certainly an association as large as ours must contain members who would like to contribute to a fund to be used in various ways which would make living in the environs of our school more gracious and which would help to bring the alumni in closer contact with the students and with the faculty. For example there exists a tentative plan to erect a Community House on the campus, in which structure there should certainly be housed the quarters of the Medical Alumni Association including an alumni room. One of the projects of our fund could be the furnishing of this room. Naturally there are many other uses to which the money could be put and probably better uses than the one suggested.

It is my pleasure to announce at this time that the Executive Committee of the Alumni Association has voted unanimously to establish such a fund and to use the two contributions mentioned above as a nucleus. It will be known as the "In Memorium Fund" but please remember that gifts to this fund are not restricted to those from deceased alumni. Everyone is invited to donate to it and everyone is requested to forward suggestions as to his ideas of the best way or ways in which any available moneys should be spent.

Your President is most optimistic and enthusiastic about the possibilities of this "In Memorium Fund." If you will pardon the obstetrical and pediatric connotation an infant has been successfully delivered, a rather small one at the moment, but certainly a healthy youngster. He should grow by leaps and bounds and should, in a short time be able to take his place in the world as a useful citizen. However he needs a great deal of nourishment and loving care from his parents for the time being. And these parents are the members of our Alumni Association.

LOUIS H. DOUGLASS, M.D.

REGISTRATION 1953 REUNION

1894

Otto Schaefer

1895

Nicholas G. Wilson

1897

Lucius N. Glenn

1898

B. W. Fassett Arthur M. Loope
James Patterson

1903

Joseph L. DeCormis	Edgar B. Friedenwald	A. H. Lancaster
C. B. Ensor	John E. Garner	C. W. Lurting
John Evans	Joseph A. Guthrie	Thomas A. Mann
George L. Faucett	Samuel King	Frederick J. W. Mayer
	J. B. Rutherford	

1904

Charles Bagley, Jr. Emil Novak J. Henry Orff

1905

C. D. Rollins

1906

Henry J. Walton

1910

Hugh R. Spencer

1912

A. E. Goldstein C. L. Joslin H. Boyd Wylie

1913

Philip J. Bean Charles Reid Edwards

1914

John F. Lutz Austin H. Wood

1916

A. M. Santos Buch	Howell I. Hammer
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1918

J. J. Giesen	Joseph Sindler
John M. Nicklas	Thomas Speake

1920

Howard M. Bubert	J. Morris Reese
Louis C. Dobihal	Fred Smith

1921

Herman Wangler

1923

Karl J. Myers	W. Wallace Walker	T. Joseph Touhey
---------------	-------------------	------------------

1924

Virginia Beyer	Clewell Howell	A. D. Weinstock
----------------	----------------	-----------------

1925

Arthur Cope	George Leibensperger
Samuel S. Glick	L. C. Richmond

1926

Margaret Ballard	H. Edmund Levin	William Schuman
------------------	-----------------	-----------------

1927

T. Nelson Carey	Frank K. Morris
-----------------	-----------------

1928

William A. Berger	Lewis Herold	Frank Merlino
Simon Brager	Joseph Laukaitis	Peter Pileggi
Bernard Friedman	Vincent Maddi	Myron Saffron
Creed C. Greer	Aaron Meister	Lee J. Volenick

1929

Jacob H. Conn	George H. Yeager
---------------	------------------

1930

Emil Hildenbrand	Louis R. Schoolman
------------------	--------------------

1931

Arthur Siwinski

1932

Harry C. Hull	Arthur Karfgin
---------------	----------------

1933

Martin Becker	Albert Himelfarb	M. H. Schneiman
Meyer Etkind	Myron L. Kenler	Alec R. Schwartz
Jerome Fineman	Lauriston L. Keown	John L. Van Metre
Frank A. Franklin	B. M. Schindler	Saul Zager

1934

Hugh B. McNally Milton S. Sacks

1935

Howard B. Mays

1936

Walter Karfigin

1937

Everett S. Diggs Joseph E. Muse, Jr. Samuel T. Revell, Jr.

1938

Aaron Feder	James H. Miniszek
Louis Gareis	Sidney Scherlis
Mary L. Hayleck	Robert C. Sheppard
Milton Katz	John A. Wagner

1939

Dexter L. Reimann

1940

Edmund Beacham	Raymond C. V. Robinson
Edwin O. Daue, Jr.	A. Frank Thompson
James R. Karns	W. H. Townshend, Jr.

1942

E. Roderick Shipley

1943

Elizabeth Acton	William B. Hagan	James J. Range
Charles V. Bowen	Frank S. Hassler	Arthur Rinehart
Donald C. Courtney	John S. Haught	William B. Rogers
Robert M. N. Crosby	Frederick W. Lurting	Edwin H. Stewart, Jr.
William J. G. Davis	James D. Miller	Stephen Van Lill
William R. Eaton	Jack C. Morgan	David R. Will

1944

W. Carl Ebeling

1946

August Kiel Joseph B. Workman

1950

Charles Bagley, III

Faculty

J. Edmund Bradley	Gordon Gibbs
Richard Coblentz	Vernon Krah
Carl P. Davis	John C. Krantz, Jr.
Frank H. J. Figge	I. A. Siegel



Maryland Alumni group who attended Southern Medical Association meeting in 1953

SOUTHERN ALUMNI HOLD DINNER

Members of the Medical Alumni Association of the School of Medicine attending the annual meeting of the Southern Medical Association held in October, 1953 at Atlanta, Georgia assembled for an Alumni dinner at the Atlanta-Biltmore Hotel. Those present included Drs. C. C. Romine, F. J. Maas, Irl J. Wentz, Augustus Frey, Jr., F. G. Prather, Mortimer Abraskin, Irene Phrydas, Everett A. Livingston, Everett L. Bishop, C. S. Jernigan, Hugh B. McNally, Eva F. Dodge, L. M. Draper, John B. Anderson, Louis G. Llewelyn, Harry M. Robinson, Sr., Louis H. Douglass, and Eustace M. Allen. Six members of the class of 1920, Drs. E. Paul Knotts, F. A. Holden, W. K. McGill, J. Morris Reese, Rhea W. Richardson, and W. Francis Martin also attended.

Dr. W. Raymond McKenzie, P & S, class of 1915, was elected first Vice-president and Dr. J. Morris Reese, Class of 1920 was named Counsellor from Maryland and a member of the Executive Committee of the Council.

SEEN AT 1953 REUNION

Two small snapshots submitted by an alumnus show the 10 year evolution of a portion of the class of 1943.

In the smaller picture (l. to r.)—Dr. and Mrs. A. M. Rinehart and Dr. and Mrs. W. B. Rogers.



How many can you name?

In the larger picture (front row, l. to r.)—Drs. M. J. Myers, Eli Galitz, D. Ehrlich and F. W. Lurting. Back row (l. to r.)—Drs. R. M. Garrett, J. J. Range and A. M. Rinehart.

PUERTO RICAN ALUMNI ACTIVE

In the past, the School of Medicine, University of Maryland has played an important role in the development of medical education in Puerto Rico. At present it is promoting high standards in medical practice among the island's physicians. During critical times the University has cooperated with the government of Puerto



Dr. Emil Novak, 1953 recipient of Honor Award (above).
(Below). Dr. Edwin Stewart, Secretary of Alumni Association Presents Honor Award to Dr. Novak.



(Above) Class of 1928

(Below) Drs. Rinehart, Crosby and Will spotted at luncheon

Rico in assigning certain places for students, under government scholarship, to pursue their medical career.

The following men, who are still living and active, have played important roles in the medical history of Puerto Rico.

In the field of *Ophthalmology*—DR'S. RAFAEL BERNABE, LUIS FERNÁNDEZ and HONORIO CARRASQUILLO. Dr's. Bernabe and Fernández were pioneers in this field in Puerto Rico. Dr. Bernabe is a past president of the Puerto Rico Medical Association.

In the field of *public health*—DR. ANTONIO FERNÓS ISERN was twice Secretary of Health on the island. At present he is the Resident Commissioner of the Commonwealth of P.R. in the Congress of the United States of America.

DR. PABLO MORALES OTERO, noted and eminent bacteriologist, was former Director of the School of Tropical Medicine of the island for many years. He was past president of the Puerto Rico Medical Association.

DR. ERNESTO QUINTERO has been outstanding in the field of Venereal Disease Control.

DR. MANUEL ESPINOSA is a noted Orthopedic surgeon.

DR. JOSÉ CASANOVA DIAZ is doing outstanding work in Cancer surgery.

DR. O. COSTA MANDRY, clinical pathologist, is Director of the Office of Pathology and Medical Education of the health department. He was advisor to the Chancellor of the University of Puerto Rico (1944) in the establishment of the School of Medi-



How many can you name?

cine in Puerto Rico. For many years he was Secretary-Treasurer of the Board of Medical Examiners of Puerto Rico. He has contributed largely to medical education and was past president of the Puerto Rico Medical Association.

The following are among the younger generation who are outstanding in their field and who are rapidly becoming leaders in their specialties.

DR. LUIS GUZMÁN LÓPEZ, class of 1940, Professor of Neurosurgery of the University of Puerto Rico and surgeon to many hospitals and a pioneer in the field of Neuro-surgery.

DR. FRANK RAFFUCCI, class of 1943, Associate Professor of Surgery of the University of Puerto Rico.

DR. GUILLERMO PICÓ, class of 1940, Clinical Professor of Ophthalmology in the University of Puerto Rico.

DR. EMILIO COLÓN YORDÁN, class of 1943, anesthesiologist and one of the pioneers in this specialized field of medicine.

DR. J. COSTAS DURIÉUX, class of 1938, Thoracic Surgeon.

DR. ENRIQUE PÉREZ SANTIAGO, class of 1943, hematologist, and one of the pioneers in this field of medicine on the island.

DR. JOSÉ ALVAREZ DE-CHOUDENS, class of 1944, Neuro-surgeon to many of the island hospitals.

These men are all outstanding in their respective fields and are among Alumni of the University of Maryland, which at the present represent a total of about 25 per cent of all the physicians practicing on the island. They have the largest Alumni Association in Puerto Rico.

ITEMS

Dr. Ernest Levi, class of 1929, has announced the opening of his office for the practice of psychiatry at the Madison Apartment Hotel, 817 Saint Paul Street, Baltimore, Maryland.

Dr. William W. Currence, class of 1942, has announced the opening of his office at 1109 Lee Street, Charleston, West Virginia. Dr. Currence will limit his practice to pediatrics.

Dr. George A. Maxwell, class of 1944, is currently engaged in the practice of gynecology in Silver Spring, Maryland.

Captain Allan H. Macht, class of 1946, has recently arrived at the Clark Air Force Base in the Philippines where he will serve a tour of duty with the United States Air Force. Captain Macht has been assigned general surgeon with the 6208th Hospital Group, Thirteenth Air Force.

Dr. Raymond L. Markley, class of 1946, has announced the opening of his office for the practice of gynecology at the Medical Arts Building, Baltimore, Maryland.

Dr. William F. Schnizker, class of 1947, has announced the opening of his office for the practice of pediatrics at 7306 Forest Road, Landover, Maryland.

Dr. Richard J. Cross, class of 1946, having now returned from active duty with the United States Air Force, has announced the opening of his offices for the practice of Eye, Ear, Nose and Throat at 104 West Madison Street, Baltimore and in the Dundalk Professional Building, 6901 Dunmanway Road, Dundalk, Maryland.

Dr. Frank J. Ayd, class of 1945, was recently named as a participant in the Christopher Lecture Forum to be held in Altoona, Pennsylvania. Dr. Ayd will speak on Wednesday, January 13, 1954.

Dr. Frederick L. Stichel, Jr., class of 1944, has announced the opening of his office for the practice of Otorhinolaryngology and Bronchoesophagology at Edmondson Village, 4580 Edmondson Avenue, Baltimore.

Dr. William J. Supik, class of 1940, has announced the removal of his office for the practice of Proctology to 8 East Eager Street in Baltimore.

Dr. Donald J. Silberman, class of 1938, who is currently Assistant Professor of Pediatrics at the University of Alabama School of Medicine, has recently been elected President of the Staff of the Children's Hospital in Birmingham, Alabama. He will serve in this capacity for the year 1953-54. Dr. Silberman is a Fellow of the American Academy of Pediatrics and holds a commission of Lieutenant Colonel in the United States Army Reserves.

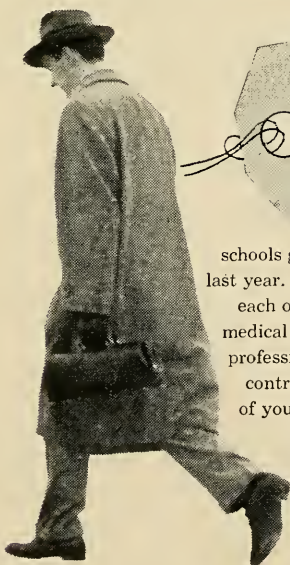
Dr. B. Stanley Cohen, class of 1947, recently returned from duty with the Armed Forces of the United States, has opened his office for the practice of medicine at 7306 Liberty Road in Baltimore.

Dr. John P. Urlock, Jr., class of 1939, has been recently elected president of the East Baltimore Medical Society. Formed in 1942, by a group of East Baltimore physicians, the Society is active in scientific activities in the Eastern District of Baltimore.

Dr. George H. Brouillet, class of 1935, is Secretary of the East Baltimore Medical Society Association.

Dr. Samuel Walker, class of 1943, is currently on the staff of the Veterans Administration Hospital at Iowa City, Iowa.

Dr. Pierson M. Checket, class of 1941, has announced the opening of a suburban office for the practice of general surgery at 7013 Liberty Road, Baltimore.



America's medical schools graduated 6,135 new doctors of medicine last year. It costs more than \$13,356 to train each of them. Most of this becomes medical school operating deficit which we as a profession must help meet. We will send your contribution along to the medical school of your choice if you prefer.



**American Medical
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OBITUARIES

Dr. David Tenner

Dr. David Tenner, Valedictorian of the class of 1928, died suddenly at his home in Baltimore on May 30.

Stricken with what was apparently an unheralded heart attack, Dr. Tenner was found dead by his wife on the morning of May 30. While he had been regularly engaged in practice, he had in recent years suffered recurrent attacks of ill health.

Dr. Tenner was born in Europe and came to this country while still an infant. He received his education in the public schools of Baltimore and following his graduation from the School of Medicine interned both at Mercy Hospital and the Baltimore City Hospitals. For a number of years he was associated with Dr. Louis Krause. At the time of his death he was Assistant Chief of Medicine at the Lutheran Hospital of Maryland and was on the staffs of the Mercy and Sinai Hospitals as well as the Levindale Home for the Aged.

A quiet, unobtrusive and learned man, Dr. Tenner exemplified an intense interest in internal medicine. He was immensely aware of all important developments and exercised a flexibility of judgment with respect to their inclusion or exclusion in any particular problem. Dr. Tenner had earned great respect as a physician and was honored as a learned man. He possessed a quiet dignity combined with a forceful personality. As a physician he had earned a widespread respect among the many colleagues who were happy to claim him as a friend.

Dr. Arthur Clifford Hearn

Dr. Arthur Clifford Hearn, class of 1897, died at his home in Baltimore on April 20, 1953. Dr. Hearn was 79 years old. Born in Howard County, he received his early education there, coming to Baltimore for his medical career. Long a general practitioner in Baltimore, Dr. Hearn served his community for over 55 years.

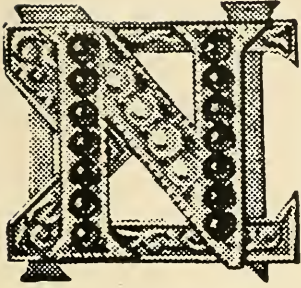
Dr. Robert V. Seliger

Dr. Robert V. Seliger, class of 1924, died on April 24, 1953 of a cerebral hemorrhage at his home. Born in New York City and a graduate of Fordham University, he started practice in Baltimore. Following his graduation, he became interested in psychiatry. Dr. Seliger was a member of the staff of the Johns Hopkins School of Medicine, the Sinai Hospital and the Seton Institute. He was Executive Director of the National Committee on Alcohol Hygiene and a member of the Mayor's Committee on the problems of juvenile delinquency. Dr. Seliger was the author of numerous scientific popular articles and pamphlets, the majority dealing with problems of alcoholism.

FRATERNAL NEWS

NU SIGMA NU

Canvass of Alumni Successful



During the summer of 1953 as a cooperative project including the Alumni corporation and the active Chapter, members of the Alumni of Beta Alpha received a letter requesting contributions for certain improvements to the Fraternity House. These improvements included numerous urgent repairs and the installation of an oil-fired furnace.

The Alumni Chapter and the active members are indeed grateful for the financial assistance afforded by the following alumni and extend to them a sincere and hearty word of thanks. Those who contributed

included Brothers Henry B. Athey, Harry Beck, Louis A. Buie, D. D. Caples, William W. Chase, Edward F. Cotter, H. A. Codington, Vladimir F. Ctibor, Wylie M. Faw, Marius P. Johnson, E. E. Jones, Albert B. Kump, Peter Mamula, George Rogers, Benjamin S. Rich, J. W. Ricketts, Tracey N. Spencer, Francis N. Taylor, G. D. Townshend, John A. Wagner, C. G. Warner, Richard T. Williams, A. C. Diehl, C. V. Latimer, Robert S. McCeney, W. O. McLane, D. W. Mintzer, M. C. Porterfield, and Porter P. Vinson. Subsequent contributors will be announced in a later edition of the Bulletin.

Members of the undergraduate chapter have continued a program of activities including the usual Christmas party and weekly scientific sessions with specially selected speakers. Members of the Alumni Association are welcome at 922 Saint Paul Street at all times.

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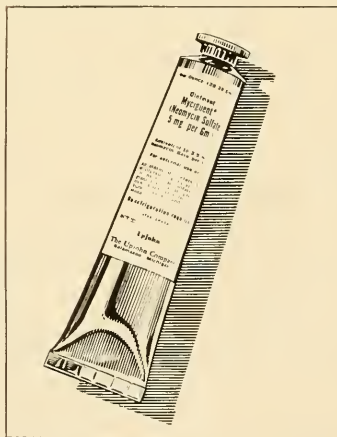
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